ATOMS FOR PEACE AND WAR 1953-1961

Eisenhower and the Atomic Energy Commission

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and Jack M. Holl

With a Foreword by Richard S. Kirkendall
and an Essay on Sources by Roger M. Anders

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CONTENTS

ILLUSTRATIONS

(following page 374)

1. Commissioners of the U.S. Atomic Energy Commission and the General Manager
   1953
   AEC-53-4802

2. Dr. Oppenheimer seated at his desk in his office at the Institute for Advanced Study, Princeton, NJ
   January 2, 1954
   Library of Congress—LC USZ62-61847

3. President Eisenhower signs the Atomic Energy Bill
   August 30, 1954
   DOE Archives (Signal Corps photo)

4. Nevada Proving Ground—Complete destruction of House #1, located 3,500 feet from ground zero, by atomic blast at Yucca Flat
   March 17, 1953
   AEC-53-4622—Photos 1 and 2 from a series of eight
   AEC-53-4625—Photo 3 from a series of eight
   AEC-53-4623—Photo 7 from a series of eight

5. *Castle-Bravo* Device—Inside the shot house
   February 1954
   DOE Archives B-83485

6. White House discussion on the Atoms-for-Peace Program. Left to right: George Humphrey, President Eisenhower, John Foster Dulles,

Dillon Anderson, Lewis L. Strauss, and Charles E. Wilson
January 13, 1956
Eisenhower Library—72-1582-2 (National Park Service)

7. Edgar Dixon and Eugene Yates at power project site
June 1955
Eisenhower Library—70-519-2

8. Official military observers and U.S. congressmen observe the mushroom cloud formation following the firing of the first atomic artillery shell at the Nevada Test Site
May 1953
AEC 64-7458 Photo by U.S. Army

9. Lewis L. Strauss with Ernest Lawrence, Mark Mills, and Edward Teller
June 18, 1957
Eisenhower Library—72-2308 (National Park Service)

10. President Eisenhower sets the cornerstone of new AEC Building in Germantown, Maryland. Left to right: John A. Derry, AEC director of Construction and Supply; Rep. Carl T. Durham, chairman of the JCAE; and AEC Chairman Lewis L. Strauss
November 8, 1957
DOE Archives

11. SNAP-3 demonstration device is shown to President Eisenhower by AEC Chairman John A. McCone and members of the Division of Reactor Development. Left to right: President Eisenhower, Major-General Donald J. Keirn, Chairman McCone, Colonel Jack L. Armstrong, and Lt. Colonel Guveren M. Anderson.
January 16, 1959
DOE Archives

FIGURES AND TABLES

FIGURES

TABLES

FOREWORD

This volume, the third in the official history of the Atomic Energy Commission, makes sizable contributions in several areas, including the Eisenhower presidency. During the years in which work on the book has moved forward, that presidency has been one of historiographical frontiers, an area of exciting explorations and new developments. A "revisionism" has emerged to challenge a conception that had taken shape earlier and was quite negative in its appraisal of Eisenhower. Some findings of the revisionists now seem quite firmly established, but the new interpretation has not swept the field. Challenges to it have also appeared. A volume focusing on nuclear energy cannot make contributions to all aspects of the controversy over President Eisenhower, but this book can and does have much to say about some main features of the debate. In the process, the book illustrates, as did the earlier volumes in the series, how very good "official history" can be.

Early on, American historians were not enthusiastic about Eisenhower as president.[1] Journalists and other writers outside the historical profession, including Samuel J. Lubell, Robert J. Donovan, Arthur Krock, Merlo J. Pusey, Arthur Larson, and Clinton Rossiter, had developed positive appraisals in the mid-1950s, but by the 1960s most historians endorsed the more negative views first presented by Norman Graebner, Hans J. Morgenthau, Richard Rovere, Marquis Childs, William V. Shannon, Walt W. Rostow, Richard Neustadt, James MacGregor Burns, and Emmett John Hughes from 1956 to 1963. A poll by Arthur M. Schlesinger in 1962 and a much larger one conducted by Gary M. Maranell in 1968 revealed that historians ranked Eisenhower in a low position among American presidents, far below the great and near great.

Several themes characterized this interpretation of the president

from Abiline. His critics in and out of the historical profession portrayed him as a man who neither dominated nor controlled his own administration and its policies. Instead, people such as John Foster Dulles ran things, often badly. Moreover, the president had little understanding or liking for his job, was weak and passive rather than energetic, muddled rather than intelligent. Dulles, a pious dogmatist, damaged U.S. relations with other nations and nearly precipitated World War III; the administration's fiscal and military policies weakened the United States. Although Eisenhower, in spite of his close ties with corporate executives and conservative Republicans, did preserve the New Deal and Containment, the domestic and international programs of Democratic administrations, he failed to take advantage of his popularity, supply needed innovations, and define and act on problems. Instead, he left them for solution by his more intelligent and energetic successor.

Before the end of the 1960s, however, a new view began to take shape and gain support. It emerged first outside the historical profession in essays by Murray Kempton, Gary Wills, and Richard Rhodes from 1967 to 1970. It moved into historical scholarship in 1972, chiefly in a large work by Herbert S. Parmet, and advanced in that world over the next several years in essays and books by Barton J. Bernstein, Blanche Wiesen Cook, Gary W. Reichard, and Charles C. Alexander. By the early 1980s, Richard H. Immerman, Douglas Kinnard, Allen Yarnell, Elmo Richardson, and R. Alton Lee had made various contributions to what was by then called "Eisenhower Revisionism." It reached a high point in works by Robert Divine, Fred I. Greenstein, and Stephen Ambrose, published from 1981 to 1984. Since then, this revisionist movement has continued to roll forward in writings of Mary S. McAuliffe, Anna K. Nelson, Walter A. McDougall, and David Allan Mayers, among others. And such writings have had an impact on the profession as a whole, for polls in this decade indicate that Eisenhower has moved toward greatness in the eyes of many historians.

Why has the change taken place? The publication of a new round of memoirs, including ones by Arthur Larson, Arthur Krock, and Milton S. Eisenhower, made some contributions; the opening of new sources, especially the file developed by Eisenhower's personal secretary, Ann Whitman, contributed even more, doing so by revealing features of his presidency that had been hidden or unclear before. The times, however, deserve most of the credit. Vietnam, Watergate, riots, high inflation, the economic slowdown, soaring government spending, short-term presidencies, unprecedented deficits in the federal budget, and other ills of American life since 1965 provided new perspectives. Looking at Ike from those angles, many observers found much to admire.

The revisionism produced by these forces had several major features. One that links all the authors and justifies placing them in a group was the portrayal of Eisenhower as a strong, active president. The writers

presented him as a person of intellectual strength with a point of view (although one they defined in varied ways), desire to push it forward, and skill in doing so. He was self-confident, a good judge of people, possessed detailed knowledge of what was going on, controlled his administration, and used his subordinates for his own purposes. Providing what Greenstein labeled "hidden hand leadership," he often concealed the ways in which he was working and frequently allowed his lieutenants to take the flak so as to preserve his prestige and strength. Although his critics often lampooned his speaking habits, revisionists insisted that he used language skillfully and was clear when he wished to be, unclear when that served his purposes.

Although not a solid bloc, many revisionists are united by admiration of the results of Eisenhower's efforts as well as his methods. Some see him as a calm, quiet contributor to the destruction of Senator Joseph R. McCarthy. Some present him as working effectively with the politicians to reshape the Republican party and preserve the New Deal. Some argue that he exerted a restraining influence on both right-wing Republicans and the "military-industrial complex," thereby avoiding both inflating prices and an escalating arms race.

Above all, the most enthusiastic revisionists, such as Divine, see Eisenhower as a man of peace. In their view, he, unlike his predecessor and his successors, was restrained, moderate, and prudent in using power and active and effective in promoting peace, his area of greatest concern. Knowing how to act in a nuclear age, he ended the Korean War, avoided military involvement on the side of the French in Vietnam, rejected "Liberation" for "Containment," and sought to end nuclear testing. Although the times offered many opportunities to go to war, he did not seize any of them, and he worked with some success to lower Cold War tensions, though doing so often pitted him against hard-line Cold Warriors in his own party, including Dulles. At the same time, the president did not back away from action when an international situation demanded it. And he treated allies with respect for he recognized that the U.S. needed their cooperation.

Although the revisionists exerted substantial influence, they did not gain a monopoly on interpretations of Eisenhower. Even some of those who contributed to the rise of the movement, such as Immerman and Cook, parted company with their associates on important points. Nearly all writers came to see Eisenhower as a strong president, at least in international affairs, but many, such as Peter Lyon in 1974, and Stephen Schlesinger, Stephen Kinzer, Thomas J. Noer, Bryce Wood, Stephen G. Rabe, George Herring, and Robert J. McMahon more recently, dislike ways in which he used his strength; at least one historian, Robert F. Burk, has reaffirmed after much research the old view of this president as weak and seriously inadequate in one major area: black civil rights.

Thus, recently opened sources now sustain antirevisionist as well as

revisionist interpretations. The former, in addition to criticizing Eisenhower for giving little help to efforts to destroy racial injustices inside the United States, charge that he lacked a coherent philosophy, failed to reshape the Republican party, and tolerated "McCarthyism" in his administration, thereby damaging the State Department as well as individuals. Antirevisionists maintain that he was a vigorous Cold Warrior, threatened nuclear war more than once, and made defective disarmament proposals. While often agreeing that the president sought to avoid nuclear war, they demonstrate that he employed covert action by the Central Intelligence Agency and other parts of the government to subvert or attempt to subvert governments and reshape the world. He did so in Iran, Guatemala, Vietnam, Indonesia, Egypt, Laos, Eastern Europe, Cuba, and the Congo.

Just as antirevisionists portray Eisenhower as weak on race relations at home, they object to his roles in the Third World. They maintain that he made the United States the foe of revolution in Southeast Asia, brought the Cold War to South Asia, failed to appreciate the strength of and adjust to Arab nationalism, and was insensitive to and distrustful of nationalist movements in Latin America and Africa and did not deal successfully with them. By failing to give enough attention to Eisenhower's failures in the Third World, the revisionists have presented, Robert McMahon argues, "a distorted and oversimplified view of American foreign relations during a critical eight-year period."[2]

There is significant disagreement among the antirevisionists. It concerns the sources of Eisenhower's actions. Some, such as Lyon, Schlesinger, Kinzer, and Cook, see him as a captive of big business, seeking to serve its interests, such as the interest of United Fruit in Guatemala. Others, Immerman, for one, emphasize ideology, presenting the president as dominated by anticommunism.

Out of the clash of points of view and the industrious exploration of the sources, a complex portrait of Eisenhower is taking form. The early book by Alexander, more recent articles by Thomas F. Soapes and Robert Griffith, monographs by Burton I. Kaufman and H. W. Brands, Jr., and a biography by Burk paint the man as complex and not easily appraised. Ambrose, in his biography of 1983–1984 and also his 1981 book with Immerman, on Eisenhower's use of "spies," makes an especially strong effort to strike a balance.

Although Eisenhower historiography is still in an early stage, some matters do appear settled, and the biggest problems seem defined. Clearly, Eisenhower was an important president—an active rather than a passive one. He was also a man of several parts who was working in a complex period and engaging in varied activities. Scholars now face the difficult tasks of weighing the different sides of his presidency. How important was each? What deserves the most weight? Should we stress his avoidance of war or his promotion of covert activities? Should we emphasize his efforts to re-

duce conflicts with the Soviet Union or his Cold Warriorism and his relations with Third World nationalisms?

The new volume by Hewlett and Holl taps the recent writing on Eisenhower and adds to our understanding of his presidency. The citations, and also the good essay on sources by Roger M. Anders, indicate that the authors and their team found the revisionists especially helpful. Thus, this work cites Parmet, *Eisenhower and the American Crusades* (1972) and Ambrose, *Eisenhower: The President* (1984), with Anders defining the first as "a well-balanced, detailed study of Eisenhower's first administration but . . . much less thorough on the second" and pointing out the harmony between Ambrose and Hewlett and Holl in interpreting the president. Hewlett and Holl also draw upon Divine, including *Eisenhower and the Cold War* (1981), "an excellent study, although limited to specific topics," according to Anders, as well as *Blowing in the Wind: The Nuclear Test Ban Debate* (1978), which the essay on sources labels the best single-volume study of the fallout controversy.

Although the revisionists provided more help than the antirevisionists, Hewlett and Holl are not uncritical in using any of their predecessors and depend chiefly on primary materials. Like other recent works, this one draws significantly on the now rich resources of the Eisenhower Library, especially the Whitman file, and also rests upon other sources, including congressional materials and records of the Department of State, the Federal Bureau of Investigation, and, above all, the Atomic Energy Commission. Even though some sources cannot yet be seen by historians, even ones with the privileges that Hewlett and Holl enjoyed, the massive quantity of materials available for substantial topics in recent history provides a rationale, as Anders points out, for team research.

This book on the Atomic Energy Commission is not a narrow history of a government agency. Dealing with the AEC during the period when issues concerning nuclear weapons and nuclear power emerged as large public concerns, the volume ranges well beyond the commission. Much of the work deals with Eisenhower. Although not uncritical, the authors find much to admire in him.

Hewlett and Holl offer support for the conception of Eisenhower as a strong, active president, determined to supply leadership. Subordinates, such as Dulles, Lewis Strauss, and John McCone, did not dominate him. Instead, he exerted a powerful influence on them, bringing them around to his point of view or restraining, even frustrating them. He concealed his "withering temper" from the public but not from his aides. He kept in touch with developments, considered programs thoughtfully, searched for answers, initiated his own ideas, acted both tough and flexible, engaged in give and take with members of his administration and with outsiders, and battled for his convictions. He played the political game with skill, concealing at times his motives and moves from the press and the public

as Greenstein suggested, while appealing boldly for support on other occasions.

Eisenhower was not a shadowy figure in his administration. He was prominent, easy to see, at least for those who could and can get behind the scenes. In this book, we see him playing many crucial roles. Determined to have an impact, he participated vigorously in the affairs of government in order to accomplish his purposes.

And one of his main purposes, Hewlett and Holl indicate, was peace. Here, too, as in their conception of Eisenhower as an active president, they are in harmony with the revisionists and contribute to developing the revisionist interpretation. These historians of the AEC present this president as passionately interested in and very active on behalf of peace, and their issue area, which includes the bomb, provides one of the best ways of illustrating these aspects of his presidency. Knowing little about

the destructiveness of nuclear weapons before he came to office, he quickly learned what these new tools could do, was deeply troubled by what he learned, and sought from the beginning to the end of his administration to reduce the danger of nuclear war. He supplied leadership in developing and promoting a series of proposals and programs: Operation Candor, Atoms for Peace, disarmament negotiations with the Soviet Union, a worldwide ban and an American moratorium on nuclear testing. And he suffered deep disappointment over the narrow limits on his accomplishments. He avoided a nuclear war in his time, but the danger of one still existed when he left office.

The book also illustrates other sides of Eisenhower's presidency. It supplies some evidence of the influence of business leaders on him, more on his preference for private rather than government enterprise. Here, the issue was who would develop nuclear power, private corporations or public agencies. The book also offers evidence on his interest in the unification of Western Europe and the development of closer ties between that region and the United States as means to peace, prosperity, and security.

Hewlett and Holl lend some support to antirevisionist themes. The book illustrates Eisenhower's difficulties in reshaping the Republican party as an instrument of internationalism, and, while they do not advance our knowledge of the president's relations with Senator McCarthy, the authors do show Eisenhower behaving in McCarthy-like ways. Even though he came out for Operation Candor, an effort to give the public the facts about the dangers of nuclear war, the president worried greatly about security and had a strong bias in favor of secrecy where weapons were concerned, and he played a major part in a sad story that featured the removal of J. Robert Oppenheimer's security clearance, thereby barring the physicist from further contributions to the nuclear program.

Although these authors give less attention than the antirevisionists to Eisenhower's acceptance of Cold War assumptions, they do note that he

was a Cold Warrior. They see him as less of one than were some other members of his administration, including Lewis Strauss, the AEC's chairman through much of the period. Compared with some other people of importance, Eisenhower was less fearful and more willing to compromise, but he did have a quite negative view of the Soviet Union and its ambitions. Unlike some other historians, Hewlett and Holl neither challenge that view nor argue that it was the key to the president's failures as a champion of peace. They merely point out that his concern about Soviet military strength did hamper his efforts to end the arms race.

Eisenhower's relations with the Third World, a topic of large significance according to some recent writers on his presidency, are largely beyond the scope of this book, yet it does touch upon the subject and, in doing so, does not challenge the antirevisionists. Hewlett and Holl have no need to discuss covert activities, but they do call attention to the Europe-first orientation of Eisenhower's Atoms-for-Peace program. Also, they note the importance for the nuclear enterprises of the United States and its European allies of uranium deposits in such places as the Belgian Congo and South Africa. And they point out that one motive for promoting nuclear power in Western Europe, a major part of Atoms for Peace, was a desire to reduce the region's dependence on the oil of Third World countries.

Thus, the volume contributes many points to our understanding of the Eisenhower presidency. Also, by the way in which it is written, the book challenges critics of official history. Note the willingness to report negative as well as positive sides of the agency's record. See, for good examples, the discussion of the Oppenheimer affair and especially the conclusion reached. See the discussions of radiation, of the conflict between arms control and Atoms for Peace, of the AEC's efforts to develop nuclear power, and of the agency's critics, such as Senator Clinton Anderson. Note the penetrating essays on personalities, such as the comparison of Strauss and McCone in Chapter 18. Above all, consider what is written about the agency and disarmament. In this and other parts of the book, the authors give their readers, including other scholars, the evidence and arguments required to form opinions of their own. By doing so, the book establishes bases for new advances on the Eisenhower frontier.

Richard S. Kirkendall

PREFACE

This book begins with a surreptitious briefing of Dwight D. Eisenhower on the status of nuclear technology in the United States a few days after his election as President in 1952. So secret was the occasion that only Eisenhower himself and two government officials knew at the time that the meeting had taken place, much less what was revealed. Some of the information conveyed was considered too sensitive to be committed to paper, and the official who spoke with the President-elect destroyed all his notes as soon as he left the room.

The book ends in autumn 1960, just eight years later, as Eisenhower was completing his second term. By that time he had become a central figure in a growing national and international debate on the terrifying issues that could lead to nuclear war or world peace. The place of nuclear power in the world economy and in military strategy was no longer the concern of a few thousand scientists, engineers, and government officials living in secret conclaves sealed off from the rest of the world by elaborate security barriers. Nuclear technology had now become a part of the political, the economic, and even the social fabric of the United States and the industrialized nations of the West.

How this remarkable change occurred in less than a decade is a question that historians have only begun to probe, and when they do they will find it a subject of extraordinary complexity and interest. As one would expect, some aspects of the emergence of nuclear technology are recorded in the conventional records of national and international politics. But for an adequate understanding of the subject, historians must also dig into complex issues of economic policy, including the role of national governments and private industry in developing nuclear and conventional power sources, the changing prospects of economic use of nuclear power in dif-

ferent parts of the world, and the impact of technological development on these prospects.

Another area of critical importance is the perceived impact of nuclear technology on military strategy and tactics, on national defense systems, and ultimately on national security itself. Related to these military issues are such difficult questions as the consequences of testing nuclear weapons and the potential impact of nuclear warfare, not just on the structures of national governments but also on biological systems on which human existence depends. Even more difficult to assess are the subtle, long-term social and psychological effects of the nuclear threat.

We touch upon all these themes in greater or lesser degree in this book, and we make no pretense that all of them have been either adequately introduced or fully explored. Rather this volume should stand among the first of many that will need to be written before historians can presume to understand the full implications of the evolution of nuclear technology. As an initial study, this book focuses upon the role of the United States government in this evolution. Other nations, of course, have had a critical part in this development, but as the first nation to use nuclear power for military purposes and as a world leader in applying this energy source to civilian uses, the United States is a reasonable place to start. Moreover, we have not attempted to follow the evolution of nuclear technology in other countries, except to view that development from the American perspective.

In our research we soon concluded that even the American story was too big to compress within the pages of a single volume. We also saw that in some instances the problems of obtaining adequate documentation for the whole story were insurmountable so soon after the events we were attempting to describe. It was obvious that a fully balanced account of the effort to build a nuclear industry in the United States would have to include the activities of many corporations and industrial leaders as well as those of elected officials and government administrators. But for many reasons the records documenting the role of private industry are not now available to historians and probably will not be for many years. Therefore, we describe events only from the government perspective.

We also made a conscious decision not to enter the vast and arcane world of delivery systems for nuclear weapons, which involve technologies far different from those associated with nuclear warheads themselves. To follow the tortuous evolution and proliferation of delivery systems and their relation to military organization and doctrine would have required another volume at least as long as this one.

Thus, we chose to write this book primarily from the perspective of the United States Atomic Energy Commission, the federal agency established in 1946 with unprecedented authority that gave it a virtual monopoly over all aspects of the development of nuclear technology for both military and peaceful purposes. The history of the Commission before the Eisen-

hower years has already been addressed in two earlier volumes: *The New World, 1939–1946*, published in 1962, and *Atomic Shield, 1947–1952*, published in 1969. As a third volume in the series, *Atoms for Peace and War* carries forward the story from the end of the second volume but with a somewhat different approach and emphasis. The earlier volumes were written as institutional histories and included chapters on organization and management. Now that the Commission no longer exists, it seems more useful to focus on its role in formulating domestic and international policy in the nuclear field, particularly the Commission's relationships with the Eisenhower White House, than to probe the agency's internal structure.

Practical considerations also influenced our decision to take this new course. Most obvious, all the Commission's official files were placed under our control as official historians of the Commission and its successor agencies. Thus, we had not only free access to the records but also responsibility for organizing and maintaining the large collection of policy documents that make up the Commission's archives.

Because we were among the first historians with security clearance to seek access to the large and rich collection of classified files in the Eisenhower Presidential Library, we were among the few able to use these records before they were closed to research. Access to the detailed summaries of meetings of the National Security Council and to the President's classified correspondence made it possible to examine policy issues for both Eisenhower's and the Commission's perspectives and thus to gain an insight into the decision process that offered an exceptional opportunity for contemporary historians. As government historians we were also given full access to classified nuclear policy records held by the Department of State. This privilege enabled us often to add a third perspective to our analysis of White House meetings on international affairs.

Thus, in exploring the evolution of nuclear technology during the Eisenhower Administration we have built our narrative around the activities of the successive chairmen of the Atomic Energy Commission and their fellow commissioners as they strove to resolve the perplexing issues that confronted them during these critical years. Never far from the scene, however, were the President's senior advisers and Eisenhower himself. Indeed, looking back on what we have written, we can only conclude that Eisenhower dominated the formulation of nuclear policy in a way that no other President has before or since. In essence, then, this book records the actions of the President and the Commissioners with only enough technical and administrative detail to keep policy considerations in context.

The opening chapter, which describes the first two secret briefings of the President-elect, not only explains what Eisenhower learned about the new technology but also gives the reader the background needed to follow the narrative. Chapter 2 recounts how Eisenhower reacted to this information, how he recognized the unprecedented threat to national security posed

by nuclear weapons, especially the hydrogen bomb, and how he began to give high priority to reformulating both domestic and foreign policy as a response to this threat.

In Chapter 3 we follow the President's long and frustrating search for a new approach to the nuclear dilemma, beginning with hopes for Operation *Candor* early in 1953 and ending with his historic address on Atoms for Peace before the United Nations General Assembly at the end of the year.

Growing out of the bitter controversies emerging from efforts to understand the significance of the bomb in 1953 was the agonizing chain of events that ultimately resulted in revoking the security clearance of J. Robert Oppenheimer, one of the nation's most distinguished and influential advisers on nuclear policy. In Chapter 4 we describe in detail for the first time the actions taken by the President, members of his cabinet, the
 Commission under Chairman Lewis L. Strauss, and J. Edgar Hoover of the Federal Bureau of Investigation in this tragedy. The Oppenheimer case marked the beginning of a new chapter in the Commission's history and in the process revealed to the public more about the life-and-death issues of the nuclear era than Operation *Candor* ever could have done.

Chapter 5 describes the efforts of the Administration, the Commission, and the Congress to revise the Atomic Energy Act of 1946, a process that raised serious questions about the role of the federal government in developing nuclear energy as an electric power source and the degree to which the Commission would be permitted to cooperate with other nations in promoting the President's Atoms-for-Peace proposal. The new Atomic Energy Act of 1954 provides the statutory basis for the rest of the volume.

In Chapter 6 the narrative moves away from the nation's capital to describe the growing sophistication and destructive capability of testing nuclear weapons, culminating in the Pacific test on March 1, 1954, that forced a sweeping reassessment of the implications of nuclear warfare. The chapter also includes an overview of the Commission's nationwide complex of mills, laboratories, and production plants built to transform uranium ore and other special materials into nuclear weapons.

Chapter 7 examines the Commission's plans to build experimental nuclear reactors for generating electric power and its attempts to encourage private industry to take part. The power demonstration reactor program is explained in the context of the growing policy debate between a Republican Administration and a Democratic Congress over the government's role in promoting nuclear technology.

Chapter 8 returns to the President's Atoms-for-Peace speech in December 1953 and follows the initial proposals by the Commission and the Department of State for realizing Eisenhower's dream. Eisenhower, Commission Chairman Lewis L. Strauss, and Secretary of State John Foster Dulles are the leading characters in this drama. The scene shifts from

Washington to Geneva and back to the United Nations in New York as Western scientists and diplomats seek a workable formula for international cooperation, with or without the Soviet Union.

Caught up in the worldwide enthusiasm over the peaceful atom, the Commission in 1955 tried to concentrate its resources on projects that appeared feasible in light of existing technology. Fending off proposals from both the Administration and the Congress for full-scale development of nuclear power reactors, the Commission opted for more modest, long-term projects involving power reactor experiments, research in high-energy physics, preliminary studies of controlled thermonuclear reactions, and research on the biological effects of radiation. These activities are described in Chapter 9.

The staggering dimensions of the thermonuclear test in the Pacific on March 1, 1954, both in terms of destructive power and radioactive fallout, required a full-scale reassessment of nuclear weapon strategy and the hazards of nuclear testing. Chapter 10 traces initial attempts to comprehend the implications of the test within the Administration and then the Commission's efforts to translate technical data into information the public could understand. Before the end of 1955, fallout had become a national and then an international issue on which the Great Debate of future years would be based.

The Atoms-for-Peace plan posed an intractable dilemma: the need to safeguard technical information on nuclear weapons against dissemination to unfriendly nations and the President's desire to promote the use of nuclear technology for peaceful purposes. Chapter 11 follows the evolution of Administration policy to resolve the dilemma and the impact of the proposed International Atomic Energy Agency and the EURATOM plan on this policy.

By late 1955 the Eisenhower Administration was facing a wide range of perplexing issues related to both the domestic and international aspects of nuclear policy, and under the threat of increasing fallout from testing and the power of the hydrogen bomb these were becoming issues of great public concern. During the first half of 1956, as described in Chapter 12, the President pushed both Strauss and Dulles to respond to this growing concern with practical proposals for limiting or banning nuclear tests. At the same time, Strauss and the Administration beat back attempts by the Democratic Congress to launch a massive federal program to build full-scale nuclear power plants.

Nuclear technology became a significant issue in presidential politics for the first time in the 1956 election. Building on Chapter 12, Chapter 13 shows how the H-bomb became an issue in the campaign and how Eisenhower used it to his own advantage.

After the 1956 election the President returned to his quest for an end to the nuclear arms race. Chapter 14 recounts both the activities of

Harold E. Stassen, the President's adviser on disarmament, in drafting a plan and the objections raised by Strauss and Dulles.

Building on the mandate that he saw in the President's reelection victory, Strauss launched out boldly in 1957 to entice private industry into building and operating nuclear power plants. A part of this strategy was creating a market for American power reactors in Europe through the EURATOM plan. As Chapter 15 reveals, the prospects for nuclear power had already begun to fade in the face of economic realities. By the end of the year Strauss stood almost alone in his dogmatic fight for a private power industry.

By 1957 the International Agency and EURATOM had become key elements in Eisenhower's grand plan to use nuclear technology to forge strong economic bonds with Europe and to provide markets for American reactors abroad. Chapter 16 examines the conflicts that the Commission

and the State Department encountered in promoting these organizations as they tried to reconcile requirements for adequate safeguards with the President's plan, heralded in the United States' impressive demonstration of technical achievement at the second international conference on the peaceful uses of atomic energy in Geneva in 1958.

Chapter 17 describes the growing public opposition to nuclear testing both in the United States and abroad in 1957 and early 1958. As Eisenhower continued to press for a test ban and a flood of publications sensationalized the health hazards of fallout, Strauss and the Commission justified further testing as a means of developing a "clean" weapon. International pressure for a test ban reached new heights in the United Nations in September 1957, and the shocking news of *Sputnik* the following month brought into positions of influence a new group of scientists with a new approach to a test ban. By the time Strauss left the Commission in June 1958, the President was considering a proposal to ban atmospheric testing.

With the appointment of John A. McCone as Strauss's successor in July 1958, the Commission began to take a more realistic and less dogmatic approach to the development of nuclear power. Chapter 18 shows how McCone worked with both the Congress and representatives of industry to develop a new set of priorities. McCone's efforts brought into public debate for the first time some of the practical problems facing nuclear power development.

During the last three years of the Eisenhower Administration the Commission supported a broad range of projects to develop nuclear propulsion systems for aircraft, rockets, and submarines and auxiliary power systems for satellites. On the civilian side, the Commission continued to finance basic research in high-energy physics, controlled fusion, and peaceful uses of nuclear explosives. As Chapter 19 shows, McCone tempered support for these projects with hard-headed appraisals of their cost

and effectiveness. The chapter also relates his personal efforts to broaden the exchange of scientific and technical information with the Soviet Union.

Chapter 20 describes Eisenhower's final attempts to end the nuclear arms race, culminating in his decision in 1958 to announce a unilateral moratorium on nuclear testing and his continuing support of negotiations with the Soviet Union until the end of his term in 1961.

Although most documentation for this book has been declassified, some narrative covering significant policy issues rests on classified materials cited in the notes but unavailable to the public. Because we have had free access to records regardless of their classification, we can be confident that our interpretations are based on all the sources available to us. At the same time, we have not always been able to present all the relevant facts, particularly on issues related to nuclear weapon technology, testing, and test-ban negotiations. In a few instances, we have had to delete material considered diplomatically sensitive in our description of negotiations with the United Kingdom. We regret that we cannot point out where these deficiencies occur, but we can assure our readers that we have tried to convey the essential truth, if not all the details upon which it rests. As we suggested at the beginning of this preface, this book represents more the first than the last word on a subject of major significance in the recent history of the United States. We trust that in time other historians and scholars will ferret out the remaining details and examine other aspects of the subject.

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When the Department of Energy was created in 1977, the history program was assigned to the Department's executive secretariat. Since then,

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CHAPTER 1

A SECRET MISSION

It was almost nine o'clock on a rainy November morning in 1952. Remnants of a heavy ground fog still clung to the sodden terrain of the Augusta National Golf Club in Georgia. Two men in the rear seat of a nondescript sedan watched anxiously as the driver felt his way over the narrow road to the clubhouse. The fog might have seemed a convenient cover for what was a highly secret mission, but in fact it had almost prevented the travelers from making their appointment. As the car stopped at the clubhouse entrance, the two men hurried inside. After a brief conversation one of them was given a seat in the manager's office, a small room on the ground floor. He was Roy B. Snapp, the Secretary of the United States Atomic Energy Commission. His mission was to brief General of the Armies Dwight D. Eisenhower, who seven days earlier had been elected President of the United States.

Snapp was a natural choice for this delicate assignment. As Secretary of the Commission he was privy to the most closely held secrets of the nation's atomic energy program, those sensitive and sometimes extraordinary bits of information that were reserved for the five Commissioners themselves. As a naval officer in World War II, Snapp had been deeply involved in military intelligence and planning when he served with the secretariat of the Joint Chiefs of Staff. At the end of the war he was special adviser to Brigadier General Leslie R. Groves, who had spearheaded development of the atomic bomb in the Manhattan Project. He had organized the Commission's secretariat in 1947 and was also serving as liaison officer with the National Security Council.[1]

While waiting for the President-elect to arrive, Snapp had an opportunity to compose himself after the harried flight from Washington. The heavy fog had sent the small commercial airliner on a circuitous route,

which terminated in Columbia, South Carolina, rather than Augusta. Fortunately Bryan F. LaPlante, the director of the Commission's Washington security operations, had accompanied him and was able to keep in touch with the Commission's Savannah River Operations Office near Augusta. Prompt dispatch of a government car had made it possible for Snapp to keep his nine o'clock appointment with Eisenhower. He also had time to reflect on the incongruity of the situation: a meeting with the future President in this small unpretentious office with carefree golfers on vacation chattering and joking just outside the two open doors leading to the room.

A few minutes later Snapp heard familiar voices in the hall outside. Suddenly he realized that he had a pistol under his jacket for safeguarding a top secret document he was carrying. He leaned around the doorpost at the rear of the office and alerted the Secret Service agent. By the time the agent had reassured him that "we're all carrying guns," Eisenhower was in
2 the room. He recognized Snapp from his visits to the Joint Chiefs' headquarters in Washington. As Eisenhower took a chair at the manager's desk, Snapp seated himself at the general's elbow.

Before Snapp could open the double envelopes containing his top secret message, Eisenhower launched into a discussion of atomic energy.[2] The President-elect said he had been talking with Charles A. Thomas, president of Monsanto Chemical Company, who had suggested that private industry build nuclear reactors that would produce both electric power for commercial purposes and plutonium for weapons.[3] As a well-known industrialist with a firsthand knowledge of nuclear technology, Thomas could command attention within both the new administration and American industry. Now, six years after the Commission had assumed responsibility for the nation's atomic energy program, industry was becoming restive over the delay in realizing the commercial application of nuclear power. While most of the nation was preoccupied with the election campaigns during autumn 1952, a clamor for a greater role in the development of atomic energy was rising among power equipment manufacturers and the electric utility industry.

Eisenhower quizzed Snapp on the feasibility of Thomas's proposal for a dual-purpose reactor. Completely unprepared for this line of questioning, Snapp had heard enough about the idea during the preceding year to assure Eisenhower that the Commission had considered Thomas's suggestion. In large part, the feasibility of dual-purpose reactors depended upon whether the military services increased their requirements for nuclear weapons. Without going into details, Snapp reminded the general that the Commission's existing production complex, plus the very large additions then under construction, would provide a truly impressive capacity. Only in recent months, when this larger capacity was nearing reality, had a dual-purpose reactor become feasible in a technical sense.

At this point the general philosophized a bit, declaring his approach

to government in economic matters allowed private industry to do as much as it could. Snapp assured him that the Commission expected private industry to take the lead in developing civilian nuclear power. The Commission, in Snapp's opinion, was already vigorously pursuing the development of nuclear reactors for a variety of purposes. Work was well advanced on nuclear propulsion systems for submarines and naval ships. Snapp also pointed out that many of the nation's largest corporations, including du Pont, General Electric, Union Carbide, and Westinghouse, were engaged in operating production facilities and laboratories for the Commission. Snapp wanted to remind Eisenhower that under the Atomic Energy Act of 1946 the Commission was still required to maintain ownership over all nuclear facilities and fissionable material used to fuel reactors. Unless the law were changed, it would be difficult for industry to have a major role in nuclear development.

By this time, however, Eisenhower's mind was moving in other directions. He was reading the top secret memorandum that had required the special security precautions LaPlante had arranged for the mission.[4] The memorandum from Gordon E. Dean, the chairman of the Commission, related the extraordinary developments that had occurred during the nuclear weapon tests then being conducted by the Commission and the military services at the Enewetak[5] proving grounds in the Pacific. So awesome was the information that President Truman had asked Dean to convey the news at once to Eisenhower. "The significant event to date," Dean wrote, "is that we have detonated the first full-scale thermonuclear device," which for security reasons the Commission referred to as *Mike*. Snapp predicted that the United States would not have a deliverable thermonuclear weapon for at least a year. When Eisenhower asked why, Snapp explained in deliberately oversimplified terms that *Mike* had been designed as a scientific experiment to determine whether heavy isotopes of hydrogen could be "burned" in the fusion process. The experiment required a large device, many times bulkier and heavier than could be carried in a bomber, plus extensive associated equipment.

What made *Mike* exceptional was the awesome power of the fusion reaction. Scientists at Enewetak estimated the blast as equivalent to more than ten million tons of TNT, or five hundred times the power of the fission weapon that devastated Hiroshima. "The island of the Atoll," Dean wrote, "which was used for the shot—Elugelab—is missing, and where it was there is now an underwater crater of some 1,500 yards in diameter."

Eisenhower paused to contemplate the significance of these gruesome statistics. He was troubled about the growing power of the nuclear weapons being added to the American arsenal. He favored scientific research and understood the scientists' interests in developing more powerful and efficient weapons, but he thought there was no need "for us to build enough destructive power to destroy everything." "Complete destruction,"

he said somewhat enigmatically, "was the negation of peace." Certainly the United States needed enough force to counteract the Soviet threat, but he neither feared the Russians nor thought this kind of fear should influence American foreign policy.

As Eisenhower read on, he paused occasionally to ask Snapp for an explanation of a technical term. He was reassured to learn that the Commission had so far released no information about *Mike*. In fact, the weather had cooperated by keeping the remnants of the mushroom cloud over the Pacific for seven days, thus making it difficult for the Soviet Union to obtain samples and determine the nature of the explosion. Some information about the test, however, would inevitably leak out, if only because of the size of the detonation and the brightness of the flash, visible for several hundred miles. The large number of military personnel and scientists involved in the *Mike* operation would also result in some leakage of information about
4 the test. There had already been a speculative story reported in Los Angeles to the effect that the United States had detonated a hydrogen bomb. The Commission had decided, however, to issue no statement about the test until the entire series was completed. Then the Commission would release only the cryptic words used after the 1951 series: "the test program included experiments contributing to thermonuclear weapons research."[6]

This proposal disturbed Eisenhower. He saw no reason to tell the Russians anything about the tests. Only when Snapp had assured him that the statement would be exactly the same as that used in the past did Eisenhower relent. Then in a reflective way he added that one of the greatest problems in the military services was that they all wanted to publicize their accomplishments. He thought it was a crime that air space reservation maps for the Commission's Hanford plant and other installations had been issued to the public.

The last portion of Dean's letter informed Eisenhower that the Commission had prepared a top secret report describing the stockpile of nuclear weapons, the organization and operation of the agency, relationships with the President, the Department of Defense, and the Congress, and a summary of current problems facing the Commission. Eisenhower expressed a strong interest in this information, but he observed that he would have no place to store classified material until he set up his office in the White House. In place of the written report he suggested a briefing by the Commissioners, preferably in New York because it would be "very awkward" for him to be in Washington before the inauguration. When Snapp assured him that the Commissioners would be glad to go to New York, Eisenhower called his secretary and scheduled a two-hour meeting for the morning of November 20 at his temporary headquarters in the Commodore Hotel.

Snapp had completed his mission, but the relaxed President-elect had still more questions about the Commission's facilities. Snapp described the complex production chain from uranium ore to finished metal. The ex-

pansion program, Snapp stressed, was a truly ambitious commitment on the Commission's part, one that did involve some risk. The Commission at that time had assured supplies of uranium ore sufficient to satisfy only half the capacity of the production chain when the expansion program was completed.[7]

Eisenhower was obviously pleased, observing that he had always had high regard for the Commission. He thought the present Commission under Gordon Dean was doing an excellent job, and he looked forward to the meeting in New York. The Commission's program involved some of the most difficult and far-reaching issues facing the new administration, and Eisenhower intended to give it high priority. His interest in the Thomas proposal showed that he recognized the peaceful potential of nuclear power. Although he accepted the key role of nuclear weapons in national defense, he did not overlook the enormous dangers that the existence of the nuclear stockpile posed. From Snapp's comments about the size of the Commission's budget and the growth of the stockpile, Eisenhower detected the fact that nuclear weapons were relatively cheap and getting cheaper. He expressed to Snapp his concern that some junior officer might decide that they could be used like other weapons. To Snapp such a statement carried special weight when it came from one of Eisenhower's background.

The first thing Snapp did after the meeting was to burn the top secret document. On the plane back to Washington he tried to jot down the details of the conversation. Immediately after his return he would have to report to the Commissioners and begin preparations for the briefing in New York on the following Wednesday.

Dean was encouraged by Eisenhower's reaction to his letter. He understood how important it was for the President-elect to understand the Commission's activities and especially its role in policy formulation. Dean had cut his teeth as a Commissioner on the painful decisions that followed the detonation of the first Soviet nuclear device in August 1949. In formulating a response to the Soviet challenge Dean had demonstrated his ability for clear thinking and independent action. Although a majority of his colleagues opposed accelerating development of a thermonuclear weapon, Dean had concluded that the project was imperative, if regrettable. With Dean's support, forces in Congress and the Executive Branch convinced Truman to make his historic decision on January 31, 1950, to give the thermonuclear weapon top priority.[8] In addition to being a law professor, Dean had served in the criminal division of the Department of Justice during the New Deal years and as executive assistant to two Democratic attorneys general. The fact that he had been a partner in a Washington law firm with the late Senator Brien McMahon, chairman of the Joint Committee on Atomic Energy, also explained his appointment to some veterans of the Washington scene. Dean, however, had justified the confidence the President had expressed in him by appointing him chairman in summer 1950.

Dean had proved himself an uncommonly able administrator, one who could find his way through the snarls and snags of controversy that entangled the Commission and come up with reasonably clear policies. He could also hold his own with Cabinet officers and the President's staff. But with Republicans in control of the White House and the Congress, Dean's power was in eclipse. He expected to leave the Commission when his term expired on June 30, 1953, if not before.

In preparing for the New York meeting, Dean relied upon Snapp and Edward R. Trapnell to gather materials from the staff. Trapnell had worked in Washington as a newspaper reporter and government public information officer before World War II. He then entered the atomic energy project in 1945 as a public relations adviser to General Groves, helped to set up the Commission's public information staff in 1947, and took charge of congressional relations in 1952. With all the charm of a Virginia gentleman, Trapnell could use his excellent knowledge of the Commission to accomplish the most sensitive of missions.

Because he had heard of Eisenhower's preference for terse, graphic presentations, Trapnell elected to prepare a briefing book that would summarize the essential facts on large poster cards.[9] Early in the presentation Trapnell included a budget summary:

Fiscal Year	*Atomic Energy Commission (in billions of $)*	*Department of Defense (in billions of $)*
1951	2.0	47.8
1952	1.6	61.0
1953	4.1	52.1

Trapnell placed on the same display card the explosive equivalent of the nuclear stockpile as it had existed at the end of World War II, as it stood at the time of the briefing, and as it was projected for 1956 and 1966. The top secret figures supported Eisenhower's observation that nuclear weapons were relatively cheap and getting cheaper.

Other charts explained the principal features of the implosion type of fission weapon as consisting of a spherical core of fissionable material (either plutonium or uranium-235) surrounded by concentric spheres of natural uranium and high explosives. The latter consisted of shaped charges or "lenses" of different kinds of explosives so designed that the shock wave initiated on the outside of the weapon would uniformly implode the core and set off the chain reaction. A chart of the six weapon types then being produced for the stockpile revealed that the yields could be varied by changing the nuclear components. Because the recent test of the thermonuclear device was considered the most sensitive bit of information on

weapon development, the chart showed only that *Mike* was twenty feet high, almost eight feet in diameter, and weighed eighty-two tons.

Another chart presented a simplified version of the vast complex of plants and laboratories that produced the stockpile: uranium mills and sampling stations, feed material plants, huge reactors for producing plutonium and tritium, and mammoth gaseous-diffusion plants for producing uranium-235. Oak Ridge fabricated the uranium parts for weapons while a new Commission facility in Colorado finished the plutonium parts and assembled the nuclear cores for weapons then in the stockpile.

The nonnuclear components were produced by contractors and suppliers too numerous to mention in the Eisenhower briefing. But Trapnell's chart did include several plants: Burlington, Iowa, and Amarillo, Texas, produced the shaped charges of high explosives; the Mound Laboratory at Miamisburg, Ohio, manufactured the high-explosive detonators and neutron initiators; and the Kansas City plant assembled most mechanical and electrical components. Overseeing the entire weapon production chain, the Los Alamos Scientific Laboratory and the Sandia Laboratory, both in New Mexico, were responsible for all research and development of nuclear and nonnuclear components, respectively. The chart did not even mention the new weapon laboratory at Livermore, California, which with Los Alamos would conduct all tests of new weapon designs at both the Pacific and Nevada sites.

For at least five years, if not from the very beginning of the Commission's existence, the production of fissionable materials and nuclear weapons for military purposes had been the primary mission. But the Commission also had broad responsibilities for generally developing nuclear science and technology and making available the results of this work for a wide range of industrial, medical, and scientific applications. A few of these applications, particularly the development of nuclear power, would contribute obviously and directly to the military and civilian objectives of the federal government. Thus, Dean asked Trapnell to give substantial attention to the Commission's reactor development efforts. The Eisenhower presentation included a photograph and diagram of the first generation of nuclear power in an experimental breeder reactor in 1951, a photograph of the land-based prototype of a nuclear-powered submarine nearing completion at the national reactor testing station in Idaho, and descriptions of several approaches to a nuclear-powered aircraft that were being studied at the Oak Ridge National Laboratory.

Dean made certain that the briefing contained a clear statement on the Commission's plans for stimulating industrial development of nuclear power. With the Commission's encouragement, four industrial teams had already completed feasibility studies of nuclear power and had submitted proposals for joint ventures with the Commission in building nuclear power

plants. A fifth industrial team was just then starting its own study, and other groups were interested. In addition to amending the Atomic Energy Act of 1946, the Commission faced a critical policy question in determining how the first companies having favored access to nuclear technology would be prevented from obtaining an unfair advantage over others.

Although the long-term outlook for producing economic electric power from nuclear fuel was good, the Commission made clear in the briefing materials that this goal would not be reached easily or quickly. The first practical use of electrical power would be in a submarine, where cost was not controlling. The development of submarine propulsion systems and other reactors for the military, however, would advance the technology of civilian power systems. As for the suggestion that industry build dual-purpose reactors, the Commission reiterated Snapp's judgment that feasibility of the idea would depend upon a continuing demand for nuclear
8 weapon materials. The Commission proposed to place a much heavier investment in developing breeder reactors that would substantially improve the economics of nuclear power and the use of raw materials.

For the purposes of the Eisenhower briefing, the Commission found it more difficult to describe its basic research in the physical and biomedical sciences. The Commission saw its first responsibility in biology and medicine as safeguarding the health of atomic energy workers and the civilian population in general from the harmful effects of radiation, whether from normal Commission operations, weapon tests, or enemy attack. But beyond this, the Commission felt an obligation to exploit the beneficial uses of atomic energy in studying and treating such diseases as cancer, in improving soil management and crop yield for agriculture, in developing new varieties of useful plants, in studying growth, nutrition, and the biological functions of plants and animals, and in using radioactive tracers to study living systems. Research was performed in the Commission's Oak Ridge, Argonne, and Brookhaven national laboratories and was supported by the Commission in 250 colleges, universities, hospitals, and private research institutions.

The Commission predicated its far-reaching research efforts in the physical sciences on the assumption that scientific knowledge provided the essential foundation for future technology. A better understanding of the physical universe would stimulate more economical production processes and new scientific applications. The research process itself would enhance the nation's scientific and technical capabilities and thus contribute to national security. As these statements appeared on the briefing charts, they smacked of platitudes; but they did reflect the honest assumptions on which the Commission's physical research program rested. The Commission's six laboratories engaged in physical research employed nearly one thousand scientists using facilities costing $200 million. Fifteen hundred scientists worked on projects of interest to the Commission in ninety universities and

private research institutes provided with government-owned equipment worth $4 million. The preeminence of the United States in the nuclear sciences by 1952 was almost entirely the result of the magnitude and effectiveness of Commission support.

Even this brief survey of Commission activities both in production and research made clear the exceptional diversification of resources in at least three senses. Organizationally the Commission was highly decentralized as a result of the conscious efforts of David E. Lilienthal, the first chairman, and his associates when they created the agency. The field managers of the nine operations offices exercised a large degree of independent authority and actually supervised most of the Commission's employees. Of the 6,600 employees on the Commission's rolls in November 1952, only 1,600 were stationed in Washington. Almost as many reported to the director of the Santa Fe operations office, which directed the Commission's weapon activities in the field, and more than one thousand were assigned at Oak Ridge.[10]

Diversification also took the form of geographical dispersion. Although many old-line executive departments, such as the Departments of the Army and Agriculture, had employees in all forty-eight states, few had major installations in such widely separated regions of the nation. The Army had established the pattern of dispersal during World War II in the interests of secrecy and military security. In a day before air travel had become commonplace, it was no easy task for headquarters officials to maintain effective communications and management control over the huge but remote installations in Tennessee, New Mexico, and Washington State. Since taking over the atomic energy project in 1947, the Commission, if anything, had further dispersed its activities to include key installations in Idaho, Nevada, South Carolina, Kentucky, and the atolls of the Pacific.

Another form of diversification rested upon the Commission's decision to continue the Army's policy of relying mostly upon private contractors working in government-owned facilities to perform both production and research functions. Employment figures demonstrated the extent of the Commission's reliance on contractors. Compared to the 6,600 government employees in November 1952, there were more than 137,000 contractor employees, of whom 62,000 were engaged in operational activities and 75,000 were working on construction projects. Among the contractors were some of the largest and best known corporations in the country (see Table 1).

Dean's busy schedule left him little time to review the briefing cards that Snapp and Trapnell were preparing, but he did find a few moments to dictate three pages as an introduction.[11] Dean's first concern was that the new President understand the roles that the White House, the Department of Defense, and the Commission had in determining national policy on nuclear weapons. He wanted to stress that the Commission had never at-

Table 1
Major AEC Contractors

PRODUCTION

Contractor	*Installation*	*Job*
General Electric	Hanford, WA	Plutonium
Union Carbide and Carbon	Oak Ridge, TN Paducah, KY	U-235
Western Electric–Bell Lab. (AT&T)	Sandia Lab., NM	Weapons
Bendix Aviation	Kansas City, MO	Weapon Parts
Monsanto Chemical	Mound Lab., OH	Weapon Initiators
E. I. du Pont de Nemours	Dana, IN	Heavy Water
American Cyanamid	Reactor Testing Station, ID	Operate Chemical Processing Plant
Phillips Petroleum	Reactor Testing Station, ID	Operate Materials Testing Reactor
Dow Chemical	Rocky Flats, CO	Weapon Parts

RESEARCH AND DEVELOPMENT

Contractor	*Installation*	*Job*
University of California	Los Alamos Scientific Laboratory, NM	Weapons
	Radiation Laboratory, Berkeley, CA	Basic Research
Union Carbide and Carbon	Oak Ridge National Laboratory, TN	Research and Development
University of Chicago	Argonne National Laboratory, IL	Reactor Development
Associated Universities	Brookhaven National Laboratory, NY	Basic Research
Westinghouse Electric	Pittsburgh, PA	Reactor Development

tempted to judge what weapon requirements should be in terms of numbers. The Joint Chiefs of Staff initiated requirements for review by the Secretary of Defense and the President. The Commission simply advised the Secretary and the President whether it would be feasible to meet the requirements in terms of dollars, manpower, and critical materials. At the same time, Dean noted, the Commission did have an important function in providing the basic weapon designs that ultimately became the source of military requirements.

In the production and allocation of special nuclear materials such as plutonium, uranium-235, and tritium, the Atomic Energy Act required

Table 1, cont.
Major AEC Contractors

RESEARCH AND DEVELOPMENT

Contractor	*Installation*	*Job*
California Research and Development Co. (sub. of S.O. of CA)	Livermore, CA	Reactor Development
General Electric	Knolls Atomic Power Laboratory, NY	Reactor Development
Iowa State College	Ames Laboratory, IA	Metallurgy
University of Rochester	Rochester, NY	Biology and Medicine

CONSTRUCTION

Company	*Site*	*Project*	*Estimated Cost in Millions*
du Pont	Savannah River, SC	6 Heavy Water Reactors	$ 1.5
Peter Kiewit & Sons	Portsmouth, OH	U-235 Gaseous Diffusion Plants, X 25–33	1.3
F. H. McGraw	Paducah, KY	U-235 Gaseous Diffusion Plants, C 31–37	922.0
Maxon Construction	Oak Ridge, TN	U-235 Gaseous Diffusion Plant, K-33	462.0
		Alloy Development Plant	35.0
Henry J. Kaiser Co.	Hanford, WA	2 Graphite Reactors	260.0
Girdler Corp.	Dana, IN	Heavy Water Plants	104.0
George A. Fuller	Fernald, OH	Feed Materials Production Center	78.0
Atkinson-Jones Construction Co.	Hanford, WA	1 Graphite Reactor	64.0
Austin Company	Rocky Flats, CO	Weapon Facility	45.0
Bechtel Corp.	Reactor Testing Station, ID	Chemical Processing Plant	34.0

a presidential determination annually. The Commission used the military requirements from the Joint Chiefs and its own estimates of how much material could be produced in drafting the determination, which was submitted jointly by the Commission and the Secretary of Defense. Although the chairman of the Commission was not a member of the National Security Council, he had served from time to time on a special committee of the council that had included the Secretaries of Defense and State. The special committee had advised the President on such important matters as the acceleration of thermonuclear weapon development in 1950 and the $3-billion expansion of production facilities approved in January 1952. With-

out explicitly claiming a role in policy formulation in the White House, Dean wanted to make clear that there was a precedent for Commission participation.

Dean hurried from one appointment to another on Tuesday, November 18. That evening he spoke to the Kiwanis Club in nearby Rockville, Maryland, and then took the overnight sleeper train to New York.[12] Also riding on the train were Snapp, Trapnell with the clumsy leather portfolio containing the briefing charts, and LaPlante, who served as a security escort. To avoid the possibility that someone might recognize them and guess that the entire Commission was going to New York to see Eisenhower, the Commissioners had decided to travel separately.

There was something bizarre about the members of the Atomic Energy Commission sneaking off to New York for a meeting with the President-elect. In this instance, as in Snapp's trip to Augusta, the reason lay in the
12 Enewetak test. The Commissioners had hoped that even the simple fact that the test had occurred would be concealed from the Soviet Union, if only to avoid providing a stimulus for a similar effort in that country. At the very least, it was important to conceal the information as long as possible so that scientists in other countries would miss the fleeting opportunity to collect samples of airborne debris that would provide information about the nature of the test. But even beyond these considerations, a curious silence surrounded anything related to the hydrogen bomb. The enormous magnitude of its implications was almost too terrifying to contemplate. Even the Commissioners and those few members of the staff used to discussing the subject could not speak casually in the awesome presence of the bomb. This partially subconscious restraint, as well as the more obvious security considerations, caused the Commissioners to hope that they could meet Eisenhower without arousing further public curiosity about the Enewetak event.

Commissioner Henry D. Smyth, the Princeton physicist who had written the famous Smyth report on the wartime atomic energy program, boarded the train alone. Appointed to the Commission with Dean in May 1949, Smyth by reason of seniority and his extensive knowledge of nuclear science and technology was an especially influential member of the Commission. The son of a university professor, Smyth had spent almost his entire life at Princeton, first as a child, then as a Princeton student, and later as a member of the physics department. Smyth's Ivy League background and his standing in the academic world as much as his capabilities as a physicist made him a valuable asset to both the wartime Manhattan Project and the current Commission. His soft-spoken and reflective manner marked him as a scholar who could exercise the detached judgment of a scientist. But he was also a man of strong principles. More than once, especially on the thermonuclear weapon decision, he had proved himself capable of fighting tenaciously for his convictions.

In the morning the members of the group made their separate ways from Pennsylvania Station to 686 Park Avenue, the apartment of Commissioner Thomas E. Murray. At sixty-one, Murray was the oldest member of the Commission. Thin, sober, and tight-lipped, Murray personified the gray eminence. His stern sense of morality grounded in an intense loyalty to the Roman Catholic Church influenced all his thoughts and actions; he saw his Commissioner duty as one of defending his nation and his church against atheistic communism. A Yale graduate in 1911, Murray had established himself as a highly successful engineer and business executive in New York. He had two hundred patents to his credit, and by the time he was appointed to the Commission in March 1950 he had been president of his own company, board member of his family company and several large corporations, trustee of several banks, and receiver of the Interborough subway system. A conservative Democrat, Murray brought to the Commission a shrewd, analytical mind, the hard-headed practicality of an engineer, and an unswerving determination to keep the United States second to none in nuclear technology.

Breakfast at Murray's apartment gave Dean and his colleagues a chance to discuss the strategy for their meeting with Eisenhower. Shortly before nine they left for the Commodore Hotel, where they were to meet the fourth Commissioner, Eugene M. Zuckert. Like Murray a Democrat, a New Yorker, and a Yale alumnus, Zuckert was the youngest member of the Commission. After a few years as an attorney with the Securities and Exchange Commission, Zuckert had joined the faculty of the Harvard business school and organized the first advanced management course ever offered there. During most of World War II Zuckert directed a training program in statistical control for Air Force officers and served briefly as a naval officer in a management position. After the war Zuckert became a protégé of W. Stuart Symington and served as his special assistant in the Surplus Property Administration, the War Department, and the Department of the Air Force, where he became assistant secretary in 1947. As a member of the Commission since February 1952, Zuckert had taken a strong interest in management. Still young and aggressive, he could be blunt and outspoken with both his fellow Commissioners and the staff.

By the time the Commissioners had reached the Commodore, Snapp, Trapnell, and LaPlante had already arrived at the service entrance and had taken a freight elevator to the seventh floor. After the Commissioners arrived, the entire group used a back stairway to reach the Eisenhower suite on the sixth floor. Only in this way could they avoid the horde of reporters stationed in the lobby.

While Trapnell put the charts in order, Snapp introduced the Commissioners.[13] Dean remarked that the Commission had nothing of paramount importance to present, but he thought he should bring Eisenhower up-to-date on the thermonuclear test. Dean expressed his regret that there

had been so many security leaks about the recent test. Some military personnel attached to the operation at Enewetak had written letters home describing the tests, and the newspapers had picked up the story. This comment triggered an outburst from Eisenhower, who did not even wait for Snapp and Trapnell to leave the room. He said he could not understand why security could not be better, citing "that Smith report" in summer 1945 that gave away much vital information about the atomic energy project and particularly the exact location of the production plants. Perhaps trying to save Eisenhower from embarrassment, Dean mentioned that Smyth, the author of the report, was in the room. This information did not deter Eisenhower at all as he continued to denounce the report for giving away too many details to no purpose.

By this time Snapp and Trapnell had left, and Dean pulled out his three pages of opening remarks. In a conversational style he gave a few
14 words of background about each Commissioner and noted one vacancy to be filled. Then Dean turned to his presentation.

Many of Eisenhower's reactions were similar to those he had expressed in Augusta. When Dean explained the thermonuclear test, Eisenhower returned to the question of secrecy. He said he wished the Commission could keep all information about the test out of print. He would have preferred that the Russians find out about it on their own; his theory was that it would upset the Russians if they came to the conclusion that the United States had progressed so far in weapon development without boasting about it. The Russians, in Eisenhower's opinion, expected the Americans to brag about everything they did, and silence would throw them off balance.

During most of the briefing Eisenhower took no particular exception to the Commission's presentation. He thought the projection of a $4-billion budget in fiscal year 1953 was reasonable in terms of an $80-billion federal budget. He again expressed his doubts that the Russians were looking for a chance to start a war or to use nuclear weapons. Only when Dean came to the chart on nuclear-propelled aircraft did Eisenhower react. He was dismayed that the Commission was spending so much money on such a fanciful idea. Zuckert attempted to reply by suggesting that the Commission was merely trying to provide what the Air Force wanted. Eisenhower interrupted and pulled himself out of his chair. Looking out the window he declared that this kind of reasoning was wrong. If a civilian agency like the Commission thought a military requirement was untenable or wasteful in terms of existing technology, there was an obligation to oppose it. He hoped to establish a board of outstanding industrialists and scientists who could review projects like this one. Nuclear propulsion for submarines was a different matter—that made sense.

The last few briefing charts described the Commission's plans for encouraging industrial development of nuclear power plants. Eisenhower

again mentioned his conversation with Charles Thomas and his interest in involving private participation as much as possible. Toward the end, Eisenhower again brought up the general question of security and expressed great confidence in J. Edgar Hoover, director of the Federal Bureau of Investigation (FBI). It was almost eleven o'clock when the Commissioners took their leave after a full and useful briefing.

The following Monday Dean called Truman to report on the session with Eisenhower. Dean explained that no one except those present knew about the briefing and he was trying to keep it quiet. Truman said he was pleased to hear about it because he wanted the incoming President to have as much information as possible.[14]

Certainly the session with the Commission had been helpful to Eisenhower. From the nature of his questions, it was apparent that he had had very little understanding of either the military or civilian aspects of the atomic energy program before the election. From the briefing the Commissioners could conclude that the new President now had some conception of the size and nature of the nuclear weapon stockpile and the growing capacity for producing special nuclear materials and weapons. On the peaceful side, Eisenhower now had some comprehension of the wide-ranging capabilities of the scientists and engineers supported by the Commission for exploiting the beneficial aspects of nuclear technology. One of the most intriguing possibilities was using nuclear power to generate electricity.

For their own part, the Commissioners also acquired some helpful intelligence during their visit to New York. They could not help but be impressed by Eisenhower's intense interest in atomic energy. The subject had been high on his agenda during his stay in Augusta, and he had given the Commissioners two hours in New York when prospective cabinet officers and leading Republican senators could command only a few minutes of his time. It was also clear that Eisenhower fully supported the Commission's efforts rapidly to enlarge the arsenal of nuclear weapons and to maintain that strength as a bastion of national security.

At the same time, the new President displayed a remarkable ambivalence about nuclear energy. Perhaps only a man with Eisenhower's experience in leading his nation in what was believed its greatest military operation could be as sensitive as he was to the extraordinary dangers inherent in the possession of so much physical power. Eisenhower seemed to understand the possibilities for human failure, misdirected ambition, intrigue, treachery, and death in the nuclear era. Thus, behind Eisenhower's realism was an intense concern with secrecy and security. This penchant of the new President would manifest itself in other parts of his Administration, but nowhere else would it have greater impact than in the Commission's programs. Finally, Eisenhower had demonstrated his dedication to economy in government, in terms of both funding and federal power. Surely this attitude had profound implications for an agency with unprecedented

authority and largess in the development of a new and frightening technology. Eisenhower seemed determined to see the atom developed for both peaceful and military uses, but in a way counter to some of the strongest trends toward the aggrandizement of power in the federal government during twenty years of Democratic administrations. With the Eisenhower victory in 1952, a new day was dawning for both the nation and the Commission. To that change and challenge the Commission would have to respond.

CHAPTER 2

THE EISENHOWER IMPRINT

The Commission's secret session with the President-elect on November 19, 1952, provided a valuable insight into Eisenhower's character and interests. It left on the Commissioners an indelible impression of the exceptional import the new chief executive would attach to both the military and civilian uses of atomic energy. But the brief session in New York did not give the Commissioners any degree of permanent entrée to the new President or his Administration. After twenty years in the political wilderness, Republican leaders, especially in the Congress, eagerly anticipated the opportunity to overhaul the vast bureaucracy they attributed to five Democratic administrations. Whatever personal confidence Eisenhower may have had in the Commissioners, as Truman holdovers they were not to be welcomed into the new Administration's official family. Roy Snapp, the Commission's secretary, had to go hat in hand to the Republicans for invitations that would permit the Commission to participate in the inauguration.[1]

Reading the newsclips during the seven weeks between the election and the inauguration, the Commissioners could get some sense of the imprint Eisenhower was attempting to make on the bureaucracy and the nation. The announcement of most Cabinet posts two days after the Commodore meeting made clear that American industry with its conservative economic principles would have a strong voice in the new Administration. President of General Motors Charles E. Wilson, named Secretary of Defense, reinforced that theme a few weeks later by selecting four industrialists to fill the positions of the deputy secretary and the three service secretaries. The nomination of John Foster Dulles to Secretary of State and the President-elect's trip to Korea early in December revealed a determination to take new and decisive initiatives in international affairs. On the cruiser *Helena* returning from Guam to Honolulu, Eisenhower discussed possible

ways of cutting the Truman budget. His "team" included Dulles and Wilson; Treasury Secretary-designate George M. Humphrey; Douglas McKay, who would become Secretary of the Interior; Joseph M. Dodge, the future director of the Bureau of the Budget; and General Lucius D. Clay.[2] The geographical distance between the *Helena* and the Commission's headquarters building on Constitution Avenue in Washington was no greater than the figurative displacement of the Commissioners from the center of power in the new Administration.

NEW PRIORITIES

Even before the November conference with Eisenhower, Dean and his fellow Commissioners had understood the need for new priorities in a new
18 Administration. Their secret conference with the President-elect and more public evidence of the course Eisenhower intended to follow reinforced Dean's impression that a major reorientation in the Commission's programs would be necessary, but such adjustments were never easy. Additional resources in terms of larger budgets and more personnel seldom accompanied new requirements. Somehow the Commission would have to produce more with the same or smaller resources.

By late January 1953, Dean could almost guess what the Eisenhower impact would be. First, the President obviously desired to build a strong nuclear arm as part of the nation's defense; that interest would require more nuclear weapons and materials. At the same time Dean could not overlook the Republicans' interest in reducing federal expenditures and reversing what they saw as an invasion of the sphere of private industry by the government in two decades of Democratic rule. Although Dean and most of his fellow Commissioners were conservative in terms of economic policy, this latter concern of the Republicans posed potential difficulties. Since October 1950, the Commission had been engaged in a vast expansion of its facilities for producing special nuclear materials and weapons. The budget for fiscal year 1954, which Truman had approved late in 1952, included $1.156 billion for operating expenses and $436 million for plant and equipment, compared to the 1950 figures of $414 million for operations and $256 million for plant and equipment. The almost threefold increase in operating expenses reflected only the beginning of the heavy funding requirements that the Commission would face as new plants still under construction were completed.[3]

Huge plants were under construction to increase capacity at each step in the production chain: the new feed materials production center at Fernald, Ohio; a plant to produce large quantities of lithium-6 at Oak Ridge; a third and fourth gaseous-diffusion plant at Paducah, Kentucky; a whole new gaseous-diffusion complex at Portsmouth, Ohio; two "jumbo"

reactors and a separation plant for producing plutonium at Hanford; and five heavy-water reactors at the Savannah River site in South Carolina for producing tritium from lithium-6 as well as plutonium. In the nationwide weapon production network, there was much activity: the new weapon assembly plant at Rocky Flats, Colorado; a major expansion of research facilities at Los Alamos; new buildings at Albuquerque, New Mexico, Burlington, Iowa, Livermore, California, and Amarillo, Texas. Plans had already been completed for testing eight weapon devices at the Nevada Proving Ground in spring 1953 and for another series including full-scale thermonuclear weapons in the Pacific beginning late in the year. The Commission's expansion program represented one of the greatest federal construction projects in peacetime history.[4]

The astronomical figures in the President's 1954 budget were still more than $800 million below the Commission's original request, the largest dollar cut falling on production facilities. Most significant, however, was the $176-million cut in obligations for reactor development facilities, which represented a reduction of 77 percent in the Commission's request. This substantial reduction reflected a lack of confidence in the Commission's efforts to reorient its reactor development efforts from plutonium production units to civilian power reactors.

Within a few days after Truman sent his budget to the Congress, the Bureau of the Budget announced its intention to review the entire document against the new Administration's own priorities. On February 3, 1953, Budget Director Dodge informed all executive departments and agencies of the need not only to set new priorities but also to balance the federal budget.[5] A few discreet inquiries by the Commission's budget staff indicated that Dodge's admonitions were not to be taken literally; the Commission would be permitted to increase its personnel ceiling to meet the needs of its expanding program.[6]

The Commission's primary defense against budget cuts was to cite the rapid growth of the military program. As Dean explained to the National Security Council in February, it was not possible to reduce expenditures and at the same time continue to produce nuclear materials and weapons at ever increasing rates in the new production plants that would be coming into operation. On this point the Commission presented a united front with the military services. A week earlier Dean had told the military liaison committee, the statutory group of officers charged with advising the Commission on military applications of nuclear energy, that recent improvements in the operation of the Hanford reactors and design changes in the Savannah River plants would enable the Commission to exceed the original goals of the 1952 expansion program. The Commission thus had been able to save funds, as Dodge had ordered, by cancelling a sixth reactor at Savannah River. The members of the military liaison committee, however, bristled at the idea of reducing fissionable material production for weapons

and assured Dean that if they had known that greater production would be possible, they would have raised the production targets for the expansion program.[7]

For several years Dean had been irritated by the unwillingness of the Department of Defense to set firm requirements. Now that the Commission was faced with substantial budget cuts, it was imperative for the Department of Defense to make firm commitments. If cuts were required, how large should they be in materials for weapons, nuclear submarines, the nuclear-powered aircraft carrier, and the nuclear-powered bomber? Dean complained to Defense Secretary Wilson: "To assume . . . that some arbitrary figure must be taken from the atomic energy program would seem to run counter to the principle that choices must be made." Yet Dodge, perhaps at the suggestion of Wilson, took just this approach in a proposal that Eisenhower approved in March 1953. Because the Commission's budget
20 was "essentially determined by the Defense Department requirements," the National Security Council should evaluate the Defense and Commission budgets together. The study was to be coordinated by the new assistant to the President for atomic energy matters, Lewis L. Strauss.[8]

Strauss had been one of the original Commissioners appointed by Truman in 1946. The son of a shoe merchant in Richmond, Virginia, Strauss had made his own way in the world. At the age of twenty in 1917, he talked himself into a position on Herbert Hoover's staff in organizing the Food Administration and later served as Hoover's personal secretary on the Belgian relief mission. Strauss then made his mark on Wall Street with the international banking firm of Kuhn, Loeb & Company. During World War II he served in the naval reserve on James V. Forrestal's staff and retired in 1945 with the rank of rear admiral. During his three years on the Commission Strauss established himself as hard-working and conscientious, if somewhat overbearing in advancing his opinions. He took a great interest in matters of security and intelligence, took credit for establishing the long-range detection system that had revealed the Soviet nuclear test in August 1949, and led the uphill fight with Dean to accelerate the development of the hydrogen bomb. With that accomplished, Strauss returned to his financial career in New York but continued to serve as a consultant to the Joint Committee on Atomic Energy in evaluating the adequacy of the Commission's production efforts. Although a conservative Republican in the Taft wing of the party, Strauss maintained his friendship with Dean. The two occasionally had lunch together and kept in touch by telephone.

Strauss had no desires or expectations to return to federal service even after Eisenhower's election. He had scarcely known Eisenhower and had not supported Eisenhower's drive for the Republican nomination. Strauss was therefore surprised when the President called him home from a Caribbean vacation in late February 1953 and asked him to make an

independent study of the atomic energy program. Within a few weeks Eisenhower suggested that Strauss take over the chairmanship of the Commission from Dean, who had announced on February 10 that he would retire within three months. Strauss refused the offer on the grounds that the Commission's chairman was necessarily involved in a large number of routine matters that prevented him from giving full attention to larger policy issues. Strauss thought he could better serve the Administration as special assistant to the President for atomic energy matters, and Eisenhower approved the appointment on March 7, 1953.[9]

Dean was delighted with Strauss's appointment. Not only did the two men understand each other, but Strauss was also knowledgeable about the Commission. Furthermore his interest in the expansion program suggested that he would fight for an adequate Commission budget. Dean offered Strauss full cooperation in preparing his report to the National Security Council.[10] In the meantime, Dean was turning his attention to the difficult question of formulating a policy for developing nuclear power.

NUCLEAR POWER: SEARCH FOR A POLICY

Long before the budget uncertainties of 1953 arose, Dean and his fellow Commissioners had seen the need for a clear-cut policy on nuclear power development. The sharp cuts that the Truman Administration had made in the Commission's reactor development budget reflected the failure to formulate a coherent plan in the face of the extraordinary pressures and conflicting demands of the expansion program. Dean himself recognized these shortcomings a few days before the inauguration. He wrote the other Commissioners that "we have been too indecisive" in responding to proposals from industry,[11] and the lack of direction in the Commission's reactor program was in part a result of that indecision. The fact was that public interest in nuclear power had overtaken the Commission's diffuse and largely ineffective efforts to formulate a policy.

The Commission's own accomplishments in developing new types of power reactors were in part responsible for the rise in public interest. In June 1952, Truman had caught the nation's attention in laying the keel for the world's first nuclear-powered submarine, an event that seemed to bring nuclear power close to reality. In October the Commission released the hitherto classified information that a small experimental breeder reactor, designed and built by the Commission's Argonne laboratory, had actually generated electricity from nuclear power and was proceeding to test the principle of breeding.[12] These accomplishments, plus the enthusiastic reports of the four industrial study groups that had been admitted behind the Commission's security barriers, gave public interest in nuclear power a stimulus it had not experienced since 1945.

Reflecting this new enthusiasm, the Joint Committee on Atomic Energy had been proposing for six months to hold hearings on the Commission's plan for industrial development of nuclear power. During autumn 1952, the committee staff had compiled a four-hundred-page volume of information, *Atomic Power and Private Enterprise.*[13] The committee's own statement reflected the conviction that the Commission's activities in developing plutonium production reactors, power reactor experiments, and military propulsion reactors had demonstrated the feasibility of nuclear power. The great question was how much it would cost.

The Joint Committee summarized industry's role since 1947 in developing nuclear power, largely under Commission contracts; but most interesting of all were the results of an informal opinion survey of "company executives, government officials, scientists, lawyers, and others" in fall 1952. There was general agreement that the Commission should develop
22 prototype reactors, but opinion on the government's role in building full-scale units ranged from full support to no support. There were three alternatives for ownership of reactors, fissionable material, and handling facilities: exclusive government ownership; permissive, licensed private ownership; or mandatory exclusive private ownership subject to government regulation. Government financing of reactor development at least through the prototype stage was generally accepted. Some scientists believed that complete government financing would bring the quickest results, but many business executives thought industry could build the full-scale plants if the government offered reasonable tax advantages and subsidies. Within industry some feared that the Commission under existing legislation would compete with private efforts to build power reactors. Industry spokesmen in general advocated revising the existing law to permit more nearly normal operation of the free enterprise system. Others, including many lawyers and government officials, opposed changing the law until the Commission had built a prototype power reactor and the needs for revision were clearer; some argued that revising the law would cause all planning to stop for six months while Congress debated the issue and another twelve months while the new legal provisions were being studied.

The Joint Committee report made clear several points: first, technological developments had created a broad interest in nuclear power; second, development of nuclear power would require administrative and financial arrangements not possible under the existing Atomic Energy Act; and third, the new interest in nuclear power was becoming the principal incentive for a fundamental revision of the act. Redefining the relationships between government and industry in the atomic energy enterprise, however, involved a host of political, economic, and social issues that only extended discussion and debate could settle.

Even in summary form, *Atomic Power and Private Enterprise* indicated the extraordinarily complex issues facing the Commission in devising

a nuclear power policy. The Commission's staff was not well equipped to handle issues of this nature. Reactor development had been approached almost entirely as a technical problem by scientists and engineers. The division of reactor development, headed by physicist and engineer Lawrence R. Hafstad, had been forced to concentrate its efforts almost entirely on production and military propulsion reactors. Not much more than one-tenth of the operating funds for reactor development were going directly into power reactor projects. Even if Hafstad and his engineers had been able to give more thought to power reactor systems, they would have found it hard to address the relevant political and economic questions. That fact was clear in late 1952 when Hafstad presented to the Commission a plan for reorienting the Commission's efforts. Essentially an engineering analysis, the proposal did not consider many larger issues raised in the Joint Committee report.[14]

William Lee Davidson, who for seven months had been director of industrial development, came closer to the mark in January 1953, when he briefed the Commissioners. Davidson was also a scientist, having come to the Commission from the research division of the B. F. Goodrich Company, but he at least had an industrial perspective if not the talents of an economist.[15] Working with Hafstad, Davidson proposed a "moderately expedited development program," intended to promote reactors capable of producing significant amounts of commercially competitive power within a decade. The existing Commission program of working through industrial study groups would take at least fifteen years. Davidson's proposal, costing about $100 million over ten years, would encourage private projects without offering direct financial support, government financing of small pilot plants, and possibly Commission construction of one nuclear power plant for its military or prestige value.[16]

By late February 1953, Davidson's ideas had been transformed into a succinct Commission policy statement for the President.[17] In lieu of high-flown language about the historical significance of nuclear power, the Commissioners attributed the need for a policy statement to budgetary expediencies and to pressure from the Joint Committee. The Commission found "the attainment of economically competitive nuclear power to be a goal of national importance." It would be a major setback for the nation if its leadership in nuclear power development should pass to other countries. The Commission would help industry by continuing to support research and development and by promoting the construction of experimental reactors.

The Commission suggested to Eisenhower several forms of assistance. The Commission proposed to finance construction of an experimental power reactor using sodium as a coolant and graphite as a moderator. The sodium-graphite reactor was expected to generate 7,500 kilowatts of electricity. Private industry would then be invited to build a full-scale reactor (100,000–200,000 kilowatts) with private funds on the condition that the

Commission would protect the owners against excessive losses. Finally, the Commission would offer private industry technical assistance from the national laboratories in building a full-scale power-breeder reactor. The price tag was identical to the Davidson-Hafstad proposal: $10 million per year over ten years.

The suggestions did not receive a warm reception from the National Security Council when Dean presented them a week later. Eisenhower did not want to approach Congress until the Executive Branch had agreed on Administration policy. Furthermore, after his discussions with Charles Thomas of Monsanto, Eisenhower doubted that industry would agree to participate without a heavy government subsidy. In Eisenhower's estimation the subsidy might go as high as $100 million; Dodge guessed it might be even higher. Secretary Wilson thought the Commission was moving too fast and should wait at least six months before making a commitment on subsidies. Secretary Humphrey went even further and urged construction of a pilot plant before any subsidies were considered. Dean shrewdly suggested that it would be unwise to limit the plan to one government-built pilot plant. He thought nuclear power development would come more quickly with industrial participation, but that would require changes in the Atomic Energy Act. Jumping on this point, Eisenhower declared that modification of the act should come first; in the meantime, he would consider only a small subsidy. In the end, the council agreed to refer the report to its group of outside consultants and hold funds for the sodium-graphite reactor to the $3 million included in the budget.[18]

During the last three weeks in March 1953, Dean had numerous opportunities to assess the Commission's position on nuclear power. There were several discussions of a preamble to the policy statement that would help the consultants from the National Security Council to put the statement in proper context. Most Commissioners, including Dean, met with the consultants to brief them on the fundamentals of nuclear technology. Dean took pains to see that Strauss had all the information he needed for his report on the Commission's budget, not only because Strauss represented the President but also because Dean had heard from the National Security Council staff that Strauss might be his successor.[19]

Dean again encountered stiff resistance to his proposed budget cuts when the National Security Council reconsidered them on March 31. He failed to restore earlier reductions in funds for the sodium-graphite reactor, but Eisenhower reaffirmed his desire to amend the act in order to make industrial participation easier. Strauss had investigated various possibilities for wringing another $200 million out of the Commission's budget, but he admitted that none of these seemed prudent. Secretary Humphrey expressed his reluctance to abandon any hopes of cutting the expansion program. What could the council do? Then Charles Thomas, one of the consultants, came up with an idea: why not eliminate the project for building

nuclear propulsion plants for aircraft and for the aircraft carrier? This action would save $254 million in the first two years. Eisenhower thought the idea had merit; these projects could be delayed until the success of the first nuclear submarine had been determined. The President was not ready to make a final decision, but no one had given him any solid reasons why these projects should be continued.[20]

NUCLEAR POWER AND PRIVATE ENTERPRISE

When the March 31 decision of the National Security Council filtered back to the Commission and the Department of Defense, the instinctive reaction in the bureaucracy was to gird up for a battle of the budget, but some astute observers saw a more fundamental issue at stake. Commissioner Murray wrote Dean that he considered the cuts in the reactor budget "merely a symptom" of the differing views of the Commission and the council. The Commission had proposed government development of nuclear power with private assistance; the National Security Council had reversed these roles by calling for private development with government assistance. Murray was convinced from two years of experience in consulting with industry on nuclear power projects that development would be much too slow to maintain American leadership in nuclear technology if the nation relied upon anticipated private profits for incentive. "Although I have consistently urged private *construction* and *operation* of nuclear power plants, I am convinced that successful and rapid *development* demands retention of Government leadership at this time."[21]

Because almost every issue discussed by the National Security Council was considered top secret, few people in the atomic energy establishment besides the Commissioners themselves could appreciate the significance of the March 31 action. Not even the Commissioners were privy to the warning of the seven consultants who had submitted to the council a strongly worded, almost alarming analysis of the government's ability to support national security programs. The consultants expressed "grave doubt that our national substance will stand the strain of its protracted diffusion over the world in the form principally of nonproductive munitions of war." The costs of rearmament during the Korean conflict had been excessive, and the consultants "deplored the profligate use of scientific and engineering manpower in military programs."

At the same time, the consultants recognized a growing need to strengthen American defenses. This need could be met, not by pouring resources into military projects in a conventional way but by restructuring military preparedness. The consultants advocated more stress on production capacity as a military reserve than on stockpiling military hardware. Defense should depend more heavily on "more powerful nuclear weapons

and increasingly effective means of delivery." The consultants also recommended more attention to tactical nuclear weapons and their deployment to NATO forces. Through careful planning and stern measures of economy it would be possible to achieve adequate material security with a balanced budget in 1954.[22]

Eisenhower and his advisers did not take such an extreme position on the need for economy, but the consultants had some influence. "The survival of the free world," in the National Security Council's opinion, depended upon "a sound, strong economy" in the United States and that rested in turn on balancing the budget, if not in 1954 or 1955, then as soon thereafter as possible. Within these financial limitations the United States would "continue to assist in building up the strength of the free world" and would seek "to contain Soviet expansion and to deter Soviet power from aggressive war." The Commission could contribute both to increased security and to the balanced budget by effecting the expenditure reduction suggested by Strauss and Thomas and by advancing the development of nuclear power "primarily by private, not government, financing." In addition to reducing government spending, private financing would "tap the great scientific laboratories of private enterprise," stimulate competition between government and private laboratories, automatically disperse nuclear production plants, and "create new industries, new employment, and new sources of taxes."[23]

Implicit in this argument for industrial development of nuclear power was a corollary that did not appear in government memorandums: if industry lost the initiative in developing this energy source of the future, then the last hope for keeping electrical energy generation in private hands would go down the drain. Late in winter 1953 few politicians or government officials were anxious to begin a new round in the old battle between public and private power interests, a struggle going back to the establishment of the Tennessee Valley Authority (TVA) in 1933 and the epic victory of the New Deal over the power trust, a triumph embodied in the Public Utility Holding Company Act of 1935. Harry S. Truman, who as a freshman senator had voted for the act, kept the issue alive during his presidency by denouncing "the million-dollar propaganda campaigns" of the private power lobby. One trade magazine for the electric utilities industry responded by calling Truman's talk of cheap public power a political "lollipop" in the presidential campaign of 1952; that publication welcomed Eisenhower's victory as a blow to the "planned drive toward socialization" of the industry.[24]

Most enthusiasm for nuclear power in spring 1953 arose from sincere convictions, as *Newsweek* put it, that "atomic power is at the finger tips of this generation." The Joint Committee's *Atomic Power and Private Enterprise* demonstrated clearly the broad base of optimism about nuclear power within American industry. The addition of a fifth industrial study

group to the Commission's cooperative nuclear power program in April 1953 suggested a growing and even impatient interest, even if the Commissioners and the staff privately discounted the significance of such arrangements. Four days later former Commissioner T. Keith Glennan, who for more than a year had spurred industry to enter the nuclear field, announced the incorporation of the Atomic Industrial Forum, an organization of businessmen, engineers, scientists, and educators interested in the industrial development and application of atomic energy. Based in New York, the forum was to serve as both a clearinghouse for information and a stimulant to industrial participation. The board of directors included the presidents or atomic energy executives of thirteen large corporations and institutions of higher education. Later that same week Walker L. Cisler, president of the Detroit Edison Company, and eight other executives representing the Dow Chemical–Detroit Edison study group, met with the Commissioners to offer amendments to the Atomic Energy Act that would enable private industry to invest in nuclear projects. The following week Congressman James E. Van Zandt, a Republican from Pennsylvania and member of the Joint Committee, introduced in the House of Representatives a bill authorizing private industry to own or hold nuclear fuel on long-term lease.[25]

Imbedded in this mass enthusiasm, however, were some indications that nuclear power could become a pawn in the endless struggle between public and private power interests. The same trade magazine that had welcomed Eisenhower's election as a boost to the defenders of private utility companies looked upon strong industry initiative in nuclear power development as a way of getting the government out of the power business. Van Zandt announced in the *Congressional Record* that one purpose of his bill was "to prevent an atomic TVA by prohibiting the Atomic Energy Commission from selling power except as produced in conjunction with manufacture of weapons materials." Public power advocates voiced their own anxieties in letters to the Commission. The American Public Power Association opposed any change in the Atomic Energy Act until steps could be taken "to prevent any monopolistic advantage accruing to any private person or corporations." The association advocated Commission development of pilot plants and participation by publicly owned electric utilities in development contracts. Using even stronger language, the Congress of Industrial Organizations supported the proposition that "the Atomic Energy Act should be strengthened by requiring that the actual operation of all facilities can be handled by the government itself and not by large monopolistic corporations like DuPont and Monsanto."[26]

Within the Eisenhower Administration the public-versus-private power issue was not stated in such stark terms, but it was evident that important elements within the Administration were determined to see that nuclear power was developed as a private enterprise. Addressing the National Security Council on April 22, 1953, Roger M. Kyes, Deputy Secre-

tary of Defense, argued for canceling altogether, rather than merely postponing development of, the nuclear bomber and the nuclear aircraft carrier. Kyes justified his proposal as an economic measure, but Dean immediately recognized it as a threat to the Commission's reactor development effort. He reminded the council that, by eliminating the sodium-graphite reactor and now the aircraft and carrier reactors, the Commission would no longer have a single nuclear power experiment. Because the Department of Defense had rescinded its requirements for the two military reactor projects, the Commission could no longer justify them in terms of national security. But Dean suggested that portions of the projects helpful to producing an economical power reactor might be continued. Eisenhower said he would be happy to consider such a recommendation from the Commission.[27]

Dean's ploy may have seemed like a slender reed to Kyes and others at the meeting, but Dean was acting on more than a hunch. A week earlier
28 Murray had proposed that it might be possible to transform the carrier project into a central station power reactor. The carrier reactor itself was to be a land-based prototype capable of generating a substantial amount of power. The project had been set up largely at Murray's insistence in April 1952. Because Westinghouse had been working on the reactor under the close scrutiny of Captain Hyman G. Rickover and his naval reactors branch for more than a year, the Commission could hope to move ahead quickly on a scaled-down version of the plant after some naval features had been eliminated.[28]

Rickover had occasion to explore Kyes's reasons for opposition to the carrier project in a lively discussion at the Pentagon on April 30. The feisty naval officer, who never hesitated to speak his mind in defending the naval reactors program, found Kyes philosophically opposed to any project that remotely threatened to give the federal government a place in nuclear power development. Kyes, a young General Motors executive whom Wilson had brought to the Pentagon from Detroit, was convinced that American industry was ready to invest in nuclear power and that industry could complete a power reactor much more quickly than Rickover could build the carrier prototype. There was no possibility, Kyes said, of reopening the decisions of the National Security Council.[29]

Although the carrier reactor was dead, the Commission saw a real possibility of converting it into a nuclear power project. While Dean was out of town, Murray and Smyth took up the cause. In a firm letter to the President on April 29, Smyth expressed the heart of the argument for the civilian power project. The Commission recognized the importance of industrial participation, but all the Commissioners were convinced that "even after statutory obstacles are removed, private industry will not assume a major part of the expensive, long-term development work that must precede the attainment of civilian power." Two days later Smyth and Murray discussed with Strauss how best to approach the President in a meeting Strauss

had arranged for May 4. When Smyth and Murray entered the Oval Office that day, they found that Strauss had laid the groundwork for a favorable reception. The President seemed impressed with Murray's argument that the new version of the carrier reactor would assure the United States the world's first large-scale nuclear power plant at a cost of $50 to $60 million less than the estimate for the carrier reactor. Eisenhower told the two Commissioners that the Department of Defense had already proposed a new version of the aircraft propulsion reactor, keeping that project alive at a lower cost.[30]

With the President's support Smyth had no trouble selling the new reactor project to the National Security Council on May 6, 1953. In addition to approving a new and scaled-down approach to the aircraft reactor, the council agreed to use Westinghouse's work on a pressurized-water reactor for the carrier in a new central station nuclear power plant; the total cost would be $100 million, "unless private financing should become available before completion." That same afternoon Murray turned in a masterful performance before the Joint Committee in making clear why private financing was not likely. Reading from letters he had received from Cisler and others, Murray declared that private industry had no money available for power reactor development. Unless the government stepped in with something like the new pressurized-water reactor, the nation would lose as much as ten years in attaining commercial nuclear power.[31] This kind of argument was certain to win the support of committee members who questioned either the wisdom or feasibility of turning nuclear power development over to private industry.

By dropping casual references to National Security Council documents Murray was able without violating executive privilege to signal the committee that the council had come to some decision on a nuclear power policy; but by not saying so specifically, Murray left to the committee the option of requesting once again the briefing that Dean and the Commissioners had so long postponed. The committee was quick to invite the Commission to testify on May 26 and to provide further information on the National Security Council's action.[32]

Dean was sharp enough to see great possibilities in the situation. The White House could not very well object to the Commissioners' presenting the nuclear power statement that the National Security Council had approved on April 22. Nor would the President be displeased if the Commission offered draft legislation amending the act to permit greater participation by industry; the President himself had given that project top priority. But Dean was also careful not to mention to the White House staff anything about the Commission's own power statement. Thus, when Dean appeared before the Joint Committee on May 26, he was free to read the entire Commission statement into the record. When the time came to present the policy statement adopted by the National Security Council, however, Dean

carefully omitted the references to the Administration's preference for "private, not government, financing." He thereby left the impression that the Commission and the council were essentially in agreement; the main difference was how much load the government would have to carry. Dean covered himself by later submitting the full text of the National Security Council statement for the record.[33]

Likewise, Dean took advantage of the opportunity to present the Commission's version of new legislation on industrial participation before the Bureau of the Budget and the Administration were able to revise it. He admitted that the proposal was no more than a draft, but he hoped to give the committee a starting place. The Commission favored a separate act, not a series of amendments to the Atomic Energy Act. Industry, under Commission license, could own power reactors, processing facilities, and fissionable materials used or produced in such operations. The Commission would regulate the safety and security aspects of licensed activities and could make long-term commitments for the sale or lease of nuclear materials to licensees. The Commission could but would not be required to purchase fissionable and by-product materials produced by licensees.[34]

Dean realized that he was cutting corners in not being completely candid with either the White House or the Joint Committee, but he saw no other way out of a difficult situation.[35] He rightly concluded that Wilson and Kyes, among others who had recently taken positions in government, did not fully appreciate the subtleties of policy formulation, especially given the tendency of new government officials to attempt sweeping reforms with simplistic measures. Dean also knew that he had avoided a head-on collision between the new Administration and the Joint Committee, a result he could rationalize as a potentially creative act. Much of Dean's success as chairman had resulted from his pragmatic view of events and his tendency to avoid theoretical arguments. But there was an inherent danger in Dean's attempt to finesse the philosophical differences over the government's role in developing nuclear power. Postponing the debate might mean that the issue would never be raised in a constructive context. Dean himself would be leaving the Commission and the government in a few weeks, and he had assurances that his successor, probably Strauss, would pursue the course he had so adroitly established.

THE NEW CHAIRMAN

Despite the rumors that Strauss would succeed him as chairman, Dean had received no official notice from the White House as late as June 1 and decided to raise the question in a formal letter to the President. The next day Eisenhower confirmed the rumors. Because Strauss had not yet severed

all his business connections in New York, the appointment was not to be announced for several weeks. Dean was pleased with the choice not only because he thought Strauss well qualified for the position but also because his successor's knowledge of the atomic energy program would make the transition easier than it might have been.[36]

Not until June 19 did Strauss inform the President that he was prepared for an announcement of the nomination "if you continue so disposed." By the time the news broke on June 24, Strauss had drafted a brief statement for the press. He noted that he had never intended to return to public life after his resignation from the Commission in 1950, but he could not fail to respond to a call from the President. He recalled his interest over two decades in the therapeutic uses of nuclear energy and expressed the hope that his return to the Commission would "coincide also with an era of vigorous progress in the benign uses of this great natural force—that is to say, for industrial power, for healing, and for widespread research."[37]

The press and members of Congress applauded Strauss's nomination without exception. Citing Strauss's interest in nuclear science, his previous service on the Commission, his promotion of the detection system that provided evidence of the first Soviet nuclear detonation, and his fight for the thermonuclear weapon, many editorial writers and columnists found Strauss "uniquely qualified," a "wise choice," "the right man for the job." General Groves called the appointment "the best thing that could have happened for the country." Strauss, the general said, "knows the subject and he's a 100 percent American." Only the newspapers in the nation's capital questioned Strauss's penchant for security, "a kind of intellectual isolationism" that would suggest his opposition to broadening access to nuclear technology. The Senate section of the Joint Committee, meeting three days later, voted unanimously to recommend Strauss's confirmation without asking him a single question.[38]

Strauss received a warm welcome in his first appearance before the Joint Committee on July 20, 1953. He took advantage of the occasion to introduce Joseph Campbell, who just four days earlier had been nominated as the fifth member of the Commission. A New York accounting executive, Campbell had served as treasurer of Columbia University during Eisenhower's presidency there. Strauss had urged the President to appoint Campbell, whom Strauss admired for his "meticulous judgment" and "personal loyalty."[39]

Just as Dean had opened the series of fourteen hearings on atomic power development and private enterprise on June 24, Strauss closed them by appearing as the last witness. Claiming that he had not been on the job long enough to have fixed opinions on the subject, Strauss did little more than read the Commission's policy statement into the record. He foresaw difficulties in formulating a new patent policy that would give industry a larger

role in developing atomic energy than was possible under the existing provisions of the Atomic Energy Act, but he hoped to be able to present proposed amendments before the end of 1953.[40]

The hearings demonstrated widespread concurrence in the Commission's evaluation of the status of nuclear power. Despite the Eisenhower Administration's initial hopes for early production of nuclear power by private industry, it was clear from the hearings that industry was not yet prepared to assume the full cost and that Commission support of research and development and its regulation of nuclear activities would have to continue indefinitely.

If the Administration accepted this fact in the abstract, it was not yet prepared to take any positive action on a government reactor project. Only the direct intercession of Congressman Cole, the new chairman of the Joint Committee, provided the House appropriations committee with the information it needed to add $12 million to the Commission's 1954 budget for the project. Cole, a Republican lawyer from upstate New York, had proven himself a conscientious and effective member of the Joint Committee since 1949. He seemed determined to demonstrate that a member of the House of Representatives could be as dynamic and influential in advancing the cause of atomic energy as his famous predecessor, Brien McMahon, had been.[41]

For the immediate future the Commission's principal reactor project would be the pressurized-water reactor, the civilian version of the prototype propulsion system for an aircraft carrier. After a heated debate within the Commission's staff during July, Rickover and his naval reactors branch were given full responsibility. Initially Strauss had questioned whether the reactor would gain public acceptance as a civilian effort if Rickover's group were in charge, but Rickover and Murray had convinced the new chairman that the project was truly civilian. Some members of the reactor development staff and the general advisory committee argued that the proposed reactor was neither large enough nor novel enough in design to offer a promising demonstration of nuclear power. Some electric utility executives attempted to keep the new venture out of Rickover's control on the grounds that Rickover would give industry little real chance to participate. Murray, however, resolutely countered these arguments and induced the Commission to settle the issue in Rickover's favor. Although the Commission did not announce the decision until October, Rickover's group and the Westinghouse team at the Bettis laboratory near Pittsburgh were already at work on the new project.[42]

In the July hearing before the Joint Committee, Strauss had been able to avoid specific commitments to a plan for developing nuclear power, but the Congressional concession was only temporary. The bright promise of the nuclear age had swept over Republicans and Democrats alike in the Congress. If Strauss intended to gain the initiative, he would have to move

quickly before Congress reconvened in January. Less obvious to the public but more telling to Strauss than the Congressional pressure was the President's determination to find some redeeming value in nuclear technology. Nuclear power for civilian purposes seemed an obvious answer, but only under certain conditions. The Administration's economic and budgetary policies would not condone large federal expenditures for that purpose. Rather, Eisenhower looked to Strauss and the Commission to break the government monopoly by proposing amendments to the Atomic Energy Act so that private industry could take the lead. The new President had left his imprint on Commission policy; it was Strauss's task to see to it that his imprint was observed.

CHAPTER 3

THE PRESIDENT AND THE BOMB

In his inaugural address on January 20, 1953, President Eisenhower said nothing explicit about atomic energy, but there were unmistakable overtones in his careful phrases. He asked the nation:

> Are we nearing the light—a day of freedom and of peace for all mankind? Or are the shadows of another night closing in upon us? . . . This trial comes at a moment when man's power to achieve good or to inflict evil surpasses the brightest hopes and sharpest fears of all ages. . . . Science seems ready to confer upon us, as its final gift, the power to erase human life from this planet.[1]

The recent test of *Mike* at Enewetak must have been on Eisenhower's mind as he read these words.

THE THERMONUCLEAR QUESTION

Eisenhower's veiled reference to the hydrogen bomb showed that he recognized the significance of *Mike*, but the new President could not have suspected that on the very next day he would be faced with a profound disagreement among leading nuclear scientists, a controversy that raised serious questions about the adequacy of the Commission's thermonuclear program. The day after the inauguration Representative Carl T. Durham, acting chairman of the Joint Committee on Atomic Energy, told the President that the Joint Committee staff had compiled a massive chronology purporting to document the argument that the Commission had been less than enthusiastic in its efforts to develop a hydrogen bomb. Eisenhower expressed interest and a few days later asked Durham for a copy of the study.[2]

The disagreement had its origins deep within the atomic energy establishment, in life-and-death issues that aroused passions and emotions. Like most things related to the hydrogen bomb, however, the debate over the scope and pace of the thermonuclear program was known to relatively few people, even among those who worked behind the security barrier that sealed off the world of atomic energy from the rest of American life. Old-timers in atomic energy development like Edward Teller could trace the dispute back to the early 1940s. Teller was an extraordinary theoretical physicist whose creative imagination had many times proven invaluable in developing ideas for nuclear weapons. He had long been intrigued with the idea of a bomb that would draw upon the enormous amounts of thermonuclear energy that powered the stars. But Teller was also a passionate individualist driven by strong emotions and original conceptions that raced far beyond the realm of existing reality. After the announcement of the first Soviet nuclear weapon test in September 1949, Teller had been a leader in the successful attempt to convince President Truman that the United States should answer the Soviet challenge by accelerating the work at the Los Alamos weapon laboratory on a hydrogen bomb.[3]

Despite aggressive efforts at Los Alamos, Teller was not convinced that either Los Alamos or the Commission was doing enough to assure the earliest possible achievement of a thermonuclear weapon. Teller's contribution had been crucial in supplying the design principle that would make the Enewetak test possible, but he continued his criticisms of Los Alamos and the Commission, even to the point of leaving Los Alamos and openly advocating early in 1952 the establishment of a new laboratory for thermonuclear research.[4]

In this new venture Teller drew upon old allies in the thermonuclear dispute; Senator Brien McMahon, chairman of the powerful Joint Committee on Atomic Energy, and William L. Borden, the committee's executive director. McMahon and Borden, like Teller, were men of passionate beliefs who lived in daily fear of the Soviet menace. McMahon, with his energetic leadership and the assistance of Borden's keen intellect, had dominated the Joint Committee since 1949. Their constant concern was whether the Commission was moving fast enough in developing and producing weapons.

Perhaps with Teller's prodding, perhaps on their own initiative, McMahon and Borden launched two further inquiries into the adequacy of nuclear weapon development in February 1952. In the first hearing, with the Secretary of Defense and the Joint Chiefs of Staff, McMahon raised the question that Klaus Fuchs, the German-born British scientist who had been convicted of Soviet espionage in 1950, had acquired during his stay at Los Alamos some essential principles of the thermonuclear weapon. Convinced that American efforts had been less than expeditious, McMahon feared that the Russians might already be ahead of the United States in the thermonuclear field.[5] In a second hearing two weeks later Borden presented the

Commissioners with an alarming interpretation of recent intelligence reports about the nature of the third Soviet test, information that suggested a dangerous underestimation of Soviet capabilities in producing both fissionable and thermonuclear materials by isotope separation.[6]

In both instances the attempts by McMahon and Borden to accelerate weapon development failed. In the first, the Department of Defense found no grounds for concluding that the Commission's efforts were inadequate.[7] In the second, Commissioner Smyth displayed his command of production and weapon technology by convincingly discounting the significance of the reports about the Soviet test. A few weeks later, however, in March 1952, the same stories about Fuchs and the recent Soviet test stirred up enough concern in the new Deputy Secretary of Defense William C. Foster to result in a meeting of the National Security Council's special committee on atomic energy. After Teller had briefed the committee on the history of weapon development, Dean with considerable difficulty convinced the Secretaries of Defense and State that there was nothing new or particularly significant in Teller's fears.[8]

Although Dean succeeded in keeping the thermonuclear question out of the National Security Council, he could not contain Teller within the atomic energy establishment. The issue of whether to create a second laboratory inevitably embroiled the Commission's general advisory committee and its chairman, J. Robert Oppenheimer. A man of exceptional ability as a physicist, administrator, and leader, Oppenheimer had built and directed the Los Alamos laboratory during World War II, had sparked much of the United States' effort to establish international control of atomic energy after the war, and, as chairman of the Commission's principal advisory committee since 1947, perhaps more than any other individual had influenced the Commission's course in its formative years. Oppenheimer also served on important committees in other executive departments. Like most members of the general advisory committee, Oppenheimer was not convinced that a second laboratory would necessarily enhance weapon development.[9] Indirectly Oppenheimer criticized Teller for promoting the second laboratory for political rather than technical reasons. The committee members also complained among themselves that they were being blamed for deficiencies at Los Alamos that they had tried to correct much earlier.

One scientist with whom the committee consulted on the second laboratory was Hans A. Bethe, the distinguished theoretical physicist from Cornell University who had long been associated with weapon development at Los Alamos. Bethe was disturbed by what he heard at the committee meeting, particularly by Dean's reports of growing dissatisfaction within the Defense Department over the thermonuclear project. He decided to write the Secretary of the Air Force a letter setting the record straight. His summary of thermonuclear development since 1946 was designed to show that Fuchs was not exposed to vital information about design of the hydrogen

bomb and that Teller's conception in April 1951 was essential to the American success. Teller, when he read Bethe's summary, came to exactly the opposite conclusion.[10]

Borden's reaction to Bethe's analysis and Teller's critique was one of frustration and alarm. In Borden's opinion the Bethe analysis was nothing but a "white wash," perhaps even the result of a conspiracy by Oppenheimer and the Commission to hide the inadequacy of the thermonuclear program.[11] There was no consolation for Borden in the fact that Oppenheimer had retired from the general advisory committee on June 30, 1952; Oppenheimer still had ample means of exerting what Borden considered a negative influence on military developments. Borden had also been disheartened by McMahon's death a few weeks after Oppenheimer's retirement. With McMahon's strong voice silenced, Borden felt that he alone would have to shoulder the leadership for awakening the nation to the lagging development of nuclear weapons, especially the hydrogen bomb.

Borden decided first to set the record straight by compiling a "history" or "chronology." For this task he recruited John T. Walker, like himself a Yale law graduate, who would serve also as the Joint Committee's counsel. From the committee's voluminous files Walker compiled a compendium of excerpts from correspondence, reports, and hearing transcripts that seemed to demonstrate the failure of the Commission, the general advisory committee, defense officials, and military officers to understand the overwhelming importance of thermonuclear weapons. The excerpts were arranged in chronological order with a minimum of editorializing; but, like a lawyer's summary of evidence, the chronology moved inexorably to its intended conclusion.

The nature of Walker's assignment made it impossible for him to turn to the Commission staff or to Los Alamos for technical assistance. Instead, he relied on John A. Wheeler, the theoretical physicist who directed Project *Matterhorn* as a part of the Commission's thermonuclear effort at Princeton University. Wheeler not only had expert knowledge of the subject but also as a Commission consultant was cleared for access to highly classified information. He had the further advantage of being close to Teller's views, thus generally sympathetic with Borden's purpose. In addition to reviewing the chronology, Wheeler also agreed to comment upon a reexamination of the Fuchs question that Walker had prepared as part of his study.[12]

THE WHEELER INCIDENT

By New Year's Day, 1953, the chronology was in final form, presumably incorporating Wheeler's latest suggestions,[13] but Walker was still deeply immersed in the Fuchs question. Walker, with Borden's encouragement,

attempted to outline in detail how Fuchs might have picked up the germ of the thermonuclear principle as early as 1946. During the first week in January Walker mailed Wheeler his analysis of the evidence. The press of business did not give Wheeler time to read the Walker document, and he finally took it with him on a trip to Washington, when he would have an opportunity to discuss it with Walker.

Thus the stage was set for the calamity that threw the thermonuclear debate into the lap of President Eisenhower. Although Wheeler took special precautions to keep this and other highly classified documents in his possession during his overnight train ride to Washington, the following morning he inadvertently misplaced the envelope containing the documents. He was able to retrieve the envelope, but the Walker document was missing. After a frantic search Wheeler reported the loss to the Joint Committee. Borden personally called railroad and Pullman officials to impound
38 the sleeping car and all laundry and trash from the train. Not until sometime before noon did Borden call the FBI. An exhaustive search, including partial dismantling of the Pullman car, failed to locate the document.

The loss seemed certain to hold awesome consequences for both Wheeler and Borden. In the first place, the document contained a succinct summary of the American thermonuclear program, including the design and operating principles of the *Mike* device, important code names, and a summary of the Bethe-Teller "debate."[14] It was hard to imagine how anyone could have selected a more sensitive document of so few pages concerning the hydrogen bomb. Second, a document of this sensitivity should have been handled as top secret material, which, according to Commission security regulations, was to be transported only by an armed courier in a private compartment. Third, Wheeler, while serving under a Commission contract and traveling on Commission funds, had lost the document in the process of compiling material that would reflect unfavorably on the Commission's management of the project.

Whether by design or circumstance, the loss of the Walker document did not immediately come to the attention of the Commission. Not until January 13, almost a week after the incident, did John A. Waters, the Commission's director of security, receive a routine letter from J. Edgar Hoover, director of the FBI, informing the Commission that Wheeler had lost a "confidential document . . . summarizing the Atomic Energy Program."[15]

Because Hoover's letter did not suggest the true significance of the lost document, Waters handled it as a routine matter.[16] Nine days later, when Waters learned that the FBI had not yet obtained a copy of the lost document from the Joint Committee, he became concerned and notified the Commission's general manager, Marion W. Boyer. After several discussions with Borden, Waters finally arranged to see a copy of the Walker report on February 4, but even then Borden would not permit the Commission to have

a copy. Waters and a Commission classification officer who saw the document were aghast at its contents and immediately informed the Commissioners. Dean personally called the FBI to alert the agency to the extreme sensitivity of the lost information, and Commissioner Murray briefed Hoover on the serious nature of the loss. Not until that day did Borden give the Commission a copy of the Walker document.

Borden had every reason to try to avoid confrontation over the Wheeler debacle. At last realizing the full implications of the case, Hoover decided to report the loss to the White House. Eisenhower, appalled by such an incredible security lapse in the waning days of the Truman Administration, seized an opportunity before a scheduled meeting of the Commissioners with the National Security Council to demand an explanation of the incident. Lined up like five school boys before the master's desk, Smyth later recalled, the Commissioners meekly witnessed an extraordinary display of presidential anger. Murray had never in his life seen anyone more agitated. In the Army, Eisenhower observed, a security offender was dealt with swiftly and surely. At first Eisenhower was convinced it was an "inside job," purposely designed to get the papers into Russian hands.[17] Dean attempted to explain the complexities of the case: that the lost paper was not a Commission document, that Wheeler was no ordinary physicist, and that the Joint Committee was deeply implicated in the affair.

Why was it necessary for the Joint Committee to have such sensitive materials in the first place? Eisenhower's inquiry unwittingly echoed the question some Commissioners had been asking themselves. Dean patiently explained that under the terms of the Atomic Energy Act the Commission was required to keep the committee "fully and currently informed."[18] Eisenhower thought this provision was a mistake and expressed doubts about the committee's leadership. Dean explained that since McMahon's death the preceding summer the committee had been effectively without a chairman. Durham, the ranking Democrat on the committee, had taken McMahon's place; but now that the Republicans controlled the Congress, it was not clear who would be chairman. Until Durham had taken over the chairmanship, the committee had always elected a senator as chairman, but now there was a bitter dispute within the committee over whether Senator Bourke B. Hickenlooper of Iowa or Congressman W. Sterling Cole of New York would get the post. Dean also mentioned to the President that neither he nor any of his fellow Commissioners had seen a copy of the Walker paper; he was not even certain that the Joint Committee staff had informed all committee members about the loss.

The President, clearly shocked by the affair and not satisfied with Dean's reply, announced that he would call Hickenlooper and Cole to his office the following morning and demand that they decide at once the question of the chairmanship. He was also going to recommend reorganizing staff functions to prevent a similar loss in the future. Still unnerved by the

incident two days later, Eisenhower discussed the problem with the National Security Council on February 18.[19] He understood that the technical staff of the committee was to be abolished when the new chairman was selected, but this action would not lessen the appalling danger created by the loss of the Walker paper. Several council members expressed their opinions that the incident could not be attributed to carelessness but to nothing less than treason and espionage. Vice-President Richard M. Nixon suggested a complete FBI investigation of every member of the committee staff, and there was some discussion about whether Hoover and the FBI could take custody of the committee's classified files.

The strong reactions of Eisenhower and the National Security Council may have been stimulated by the growing pressure of the Rosenberg case. When Wheeler had made his ill-fated trip to Washington on the night of January 6, many Rosenberg sympathizers were coming to the nation's capital to demonstrate at the White House for presidential clemency for Julius and Ethel Rosenberg, the convicted atomic spies whose execution had been stayed until the President could act. On February 11, just a week before Eisenhower learned of the loss of the Walker document, the President had denied clemency on the grounds that the Rosenberg's betrayal of the nation's atomic secrets to Russia "could well result in the deaths of many, many thousands of innocent citizens."[20]

In the face of this decision, how could Eisenhower have viewed the loss of the Walker document with less concern? After all, the Rosenbergs had presumably passed on unevaluated information about the early designs of atomic weapons; the Walker paper was a detailed and authentic description of the operating principles of the hydrogen bomb. There was, however, a certain irony in the outcome of the Wheeler affair: Wheeler, who admitted his carelessness, suffered no public embarrassment; moreover, no one who really knew him or anything about the incident ever questioned his loyalty or integrity. In a most serious predicament, which might have resulted in the loss of Wheeler's security clearance, the Commission's chairman had defended Wheeler before the President as a scientist of exceptional abilities, a man so gifted that the nation could not afford to lose his services. Wheeler received an oral and written reprimand from Dean, but the incident was completely concealed behind the security barriers.

Borden, on the other hand, stood to lose most of the influence he had come to wield over national policy on nuclear weapons. Before McMahon's death Borden had been one of the most powerful and effective spokesmen for nuclear weapons in the atomic energy establishment, but he now realized that his days with the Joint Committee were numbered. Even before the Republican victory in the November elections Borden had consulted Strauss and others about a position in private industry. The Wheeler incident now made the inevitable more imminent. Dean seized the opportunity afforded by Wheeler's lapse to break Borden's grip on the committee.

By bringing the incident to the attention of the President and some committee members before Borden reported it, Dean undermined confidence in Borden in places that counted most. In spring 1953 Borden began in earnest to wind up his affairs on the Hill.

If Borden had any regret over leaving his committee post, it was that he might not have time to complete his campaign for the thermonuclear weapon. The planning and hard work of the preceding three years had culminated in the thermonuclear chronology, which he considered a massive indictment of the Commission's efforts. Walker had worked day and night to complete the study before he left the Joint Committee staff in early 1953. No doubt Borden had paved the way for Congressman Durham to raise the thermonuclear issue with Eisenhower the day after the inauguration. The new president had acknowledged receipt of the chronology on February 14, 1953,[21] but could hardly have grasped the significance of the bulky and somewhat turgid document before he heard the alarming news of the Walker paper. The irony was that Borden, who had tried with all his considerable powers to speed the building of a thermonuclear arsenal, had through the Wheeler incident destroyed his own effectiveness in advancing that cause.

THE SHADOW OF THE BOMB

Since Roy Snapp's secret visit to Augusta in November 1952, Eisenhower had been struggling with the staggering implications of a weapon that could destroy not only an entire city but perhaps civilization itself. Dean and his colleagues had explained the hydrogen bomb in a technical sense, as a piece of hardware that could be produced if sufficient materials were available. They had outlined the Commission's plans for testing components of a deliverable thermonuclear weapon at the Nevada Proving Grounds during the spring and achieving an emergency capability after a full-scale test in the Pacific early in 1954. The President still had faith in the Commission's technical competence in these matters, despite the indictment set forth in the Joint Committee chronology.

From his very first exposure to the subject, however, Eisenhower saw the hydrogen bomb as much more than a matter of weapon technology. He focused immediately on the enormous power of the new weapon, the falling ratio of cost to destructive capability, and the desperate problems of control in a hostile world. However competent the atomic energy establishment might be, the Commissioners did not speak to these larger considerations; at least they had not (and perhaps could not) in the limited context of a presidential briefing. Outside the Commission virtually no one had enough facts to discuss the situation knowledgeably.

A rare opportunity to wrestle with some larger issues presented by

the hydrogen bomb came in February 1953 when the President received a report on "Armaments and American Policy" prepared by a group of State Department consultants.[22] The report had originated in a request from Secretary of State Dean G. Acheson in April 1952 that a group of consultants take a fresh look at the strategy that the United States was using in the increasingly meaningless sessions of the United Nations Disarmament Commission. Because Acheson was thinking of a wide-ranging, original study similar to that prepared by the Acheson-Lilienthal group in 1946, he appointed two members of that group to the disarmament panel: Oppenheimer and Vannevar Bush, the eminent electrical engineer and administrator who had had a key role in formulating government policy on science and atomic energy for more than a decade. The other members of the panel were John S. Dickey and Joseph E. Johnson, both former State Department officials who were now prominent in academic circles, and Allen W. Dulles, deputy director of the Central Intelligence Agency. McGeorge Bundy, then on the Harvard faculty, served as secretary and Oppenheimer as chairman.

The Oppenheimer disarmament panel did not take a narrow view of its assignment but rather chose "to consider the problem of arms limitation in the context of a general study of the political meaning of modern weapons in the present deeply divided world." In this broader context the panel soon became convinced that the proper center of study was not arms regulation itself but the larger range of problems that came under the general heading of armaments and American policy. Reviewing the history of arms control since the time of the Acheson-Lilienthal study, the panel saw no real sign of likely agreement, largely because of the intransigent and deceitful attitude of the Soviet Union. The differences between the "free world" and the Soviet Union were "so deep-seated that no genuine, large-scale political settlement seems likely within the present generation."

The panel was convinced, however, that something had to be done about the frightening acceleration of the arms race in which devastating power was accumulating on both sides at an unprecedented rate and in a way that would put the heart of both nations, not just international borders and armies, on the front lines of any future war. Even more dangerous was the fact that few people, even inside the government, understood the special character of the nuclear arms race. Because nuclear weapons were so dangerous, men hesitated to think hard about them, and the resultant high level of security reduced "the quantity and quality of responsible discussion."

What most people, both inside and outside the government, failed to understand, the disarmament panel claimed, was not only that the nuclear stockpiles on both sides were growing at a phenomenal rate but also that the destructive force of the weapons in the stockpiles was increasing rapidly as new models replaced old. The panel saw no real long-term short-

age of fissionable material for any major power and considered nuclear weapons relatively cheap. The Soviet Union might never have as many bombs as the United States at any given time, but the panel pointed out that the Russians easily could have as many as the Americans had had a few years earlier. In a matter of five or ten years the Soviet Union would have enough nuclear weapons to destroy American society beyond hope of recovery.

Because few Americans understood the unprecedented implication of the nuclear arms race, the panel believed that the United States government had reacted to the growing Russian threat with the knee-jerk response of trying to stay ahead of the Soviet Union in weapon development and in building the capability for a massive nuclear attack in case of war. The United States, in the panel's opinion, had backed itself into a rigid policy of massive nuclear retaliation that left the nation without flexibility for response.

To provide more flexibility, the disarmament panel first recommended "a policy of candor toward the American people—and at least equally toward its own elected representatives and responsible officials—in presenting the meaning of the arms race." Public understanding was essential to the American system, and Americans did not show a responsible awareness of the dangers of nuclear weapons. There should be a straightforward statement from those who knew the facts, including quantities of weapons and rates of increase. The State Department advisers did not believe that the facts would cause hysteria; the present danger in the United States was not hysteria but complacency. Americans should understand the rate and impact of the Soviet danger, and the government should go beyond the point of just keeping ahead of the Russians.

The panel's other recommendations were not spelled out in as much detail, but they were firmly stated. The United States, in the consultants' opinion, should help other nations in the free world to understand the nuclear threat and their relationship to America's nuclear strength so that some sense of responsibility might be shared outside the Soviet bloc. The panel urged much more attention to continental defense of the United States, not to prevent entirely a Soviet nuclear attack, but rather to minimize its effects and to give the United States more freedom to act in a crisis. Finally, the consultants recommended that the United States disengage itself from the hopeless and misleading disarmament discussions in the United Nations and develop better communications with the Soviet Union.

Unlike many reports by consultants, Bundy's final draft of the panel study reflected a broad understanding of the subject, careful analysis, a judicious balance of the ideal and the practical, and above all succinct and direct language. Eisenhower was so impressed with the report that he discussed it at some length with the National Security Council on February 18, 1953.[23] He was particularly taken with the first recommendation—more

candor in explaining the nature of the arms race to the American people. The President asked the council members to read the report and be prepared to discuss it the following week.

The council meeting on February 25 gave Dean and all the members an opportunity to express their views on the report. Dean had arranged to discuss it with Allen Dulles, a panel member, before going to the meeting. Dean favored the first recommendation on the grounds that better understanding of the growing power of nuclear weapons would have a salutary effect on both the Kremlin and the American people. Secretary Wilson led the opposition to the panel's recommendations, primarily on the grounds that a candid explanation of the arms race would frighten the American people rather than reassure them. Eisenhower was now concerned about the first recommendation for Operation *Candor*. He could see that a better understanding of the catastrophic implications of nuclear warfare both in the United States and throughout the world would be a step toward peace. At the same time, the President was deeply impressed with the importance of secrecy and particularly its value in keeping the Russians off balance.[24] Like many things in government, candor was good in theory but hard to put into practice.

THE BATTLE REJOINED

Eisenhower's favorable reaction to the panel report represented no small accomplishment for Oppenheimer and his colleagues. In the hostile and strident atmosphere of the Cold War, it was not easy to sound the note for openness and public discussion of policies affecting the national security. By catching the President's attention, Oppenheimer had reason to hope that the deadly issues surrounding the development and production of ever more efficient nuclear weapons would not be buried once again from public view. To bring the issues into public debate Oppenheimer presented an unclassified version of the panel report at a meeting of the Council on Foreign Relations in New York on February 17.[25]

Oppenheimer's very success, however, increased the likelihood that adversaries who had been trying to drive him from the government since 1949 would join forces once again to challenge him as the panel report raised old issues in a new form. Just as the President had seized on the *Candor* proposal as the most intriguing idea in the panel report, so others would use *Candor* as a symbol encompassing the complex of philosophical arguments that arose from the contemplation of thermonuclear war. Thus, *Candor* served as a lightning rod that inevitably drew old rivals back to the great debate over thermonuclear strategy.

For Oppenheimer nothing was more fateful than the circumstances that made it possible for two of his most skillful and dedicated adversaries

to join forces once again just as the *Candor* breakthrough occurred in February 1953. Although Borden was on his way out as executive director of the Joint Committee, he had the determination and fortitude to hold on for one more skirmish with Oppenheimer on national security issues. In his lonely battle as a Democratic holdover in a Republican Administration he had the immense good fortune of acquiring the support of a former ally who was to become the President's closest adviser on atomic energy. On March 7, two weeks after Oppenheimer's meeting with the President, Lewis Strauss became Eisenhower's special assistant on atomic energy.

Development of the hydrogen bomb had been the common interest that first brought Borden and Strauss together. In 1949 both men had felt strongly enough about the urgency of the weapon to look upon the reservations of Oppenheimer and the general advisory committee with incomprehension and dismay. The two men had worked together to redirect the trend of events that Oppenheimer's committee had set in motion, and they had emerged victorious when President Truman decided to accelerate research on the hydrogen bomb in January 1950. After Strauss left the Commission a few weeks later, Borden arranged to have Strauss serve as a special adviser to the Joint Committee on the expansion of the Commission's capacity for producing fissionable material, and the two men kept in touch after that assignment ended. During summer 1952 Strauss had helped Borden and Walker in providing information from his personal records for the thermonuclear chronology.[26]

Strauss and Borden were also drawn together by their growing distrust of Oppenheimer's motives, integrity, and judgment, particularly after their experience during the hydrogen bomb debate in 1949. Borden probably first learned about the derogatory information in Oppenheimer's security file a few weeks after President Truman's hydrogen bomb decision, when J. Edgar Hoover testified before the Joint Committee; he also had an opportunity to review the file briefly in November 1950.[27]

The FBI's file on Oppenheimer went back to March 1944, when an FBI investigation revealed that Oppenheimer had belonged to several organizations infiltrated or dominated by communists. The FBI also learned that early in the 1940s Oppenheimer's brother, wife, and former mistress had been communists. Even after he became involved in the Manhattan Project, Oppenheimer continued to associate with members of the Communist party. Strauss had known about the contents of the file at least as early as March 1947, when as a Commissioner he had reviewed it and agreed that it contained no new information warranting further consideration of Oppenheimer's clearance.[28]

Strauss's attitude toward Oppenheimer was ambivalent at best. On the one hand, he was impressed by Oppenheimer's intelligence and ability as an administrator and scientist. As a trustee of the Institute for Advanced Study, Strauss had urged Oppenheimer's appointment as director; and as a

Commissoner, Strauss had offered Oppenheimer assistance in his work as chairman of the general advisory committee.[29] On the other hand, the two men disagreed on many issues in addition to those related to the thermonuclear weapon: the merits of exchanging nuclear information and material with other nations, the need for rigid security in research activities, and the feasibility of Operation *Candor*. Common among Commission staff members was a story, based on one dramatic incident, that Oppenheimer had earned Strauss's undying hatred by ridiculing him before the Joint Committee in a public hearing for his opposition to the shipment of iron isotopes to Norway in 1949. The event had occurred, but it hardly seemed a sufficient explanation for Strauss's feelings about Oppenheimer. Strauss was sensitive to personal slights, but he was also sophisticated enough to consider many factors in making any decision.[30]

Both Strauss and Borden were able in 1951 and 1952 to suspend
46 any personal judgments about Oppenheimer's loyalty, but they continued to worry about his effect on thermonuclear development. In August 1951 they had shared exasperation over what they saw as Oppenheimer's efforts to discourage scientists from working on the hydrogen bomb. The decision led inevitably to speculation about Oppenheimer's motivations, and the two men once again mulled over some of the troubling information in Oppenheimer's security file. In spring 1952 Borden was among those who attempted to remove Oppenheimer's influence from the atomic energy program by making certain that he was not reappointed to the general advisory committee when his term expired on June 30. There is no evidence that Strauss was directly involved, but he was probably aware of the successful efforts by Teller, Murray, and Willard F. Libby to prevent Oppenheimer's reappointment.[31]

Oppenheimer's decision not to seek another term in the face of the opposition did not end the matter. Although no longer a member of the general advisory committee, Oppenheimer did obtain a consultant's contract from the Commission and several government boards. Hence Borden had no reason to relax his concern about Oppenheimer. Probably at Borden's suggestion, Senator McMahon invited Francis P. Cotter, a former FBI specialist in Soviet espionage techniques, to join the committee staff. Cotter's sole function was to dig into every scrap of evidence, to check out every lead in the Oppenheimer file. Both Borden and Cotter followed with interest the government's case against Joseph W. Weinberg, at one time a graduate student in physics at the University of California, for perjuring himself in testifying that he had never attended a communist meeting in Berkeley in 1941, when one such meeting was allegedly held in Oppenheimer's residence. Perhaps Borden's suspicions were further aroused when the case against Weinberg was suddenly dropped.[32]

During summer 1952 Cotter continued to run down snippets of information in Oppenheimer's security file. In November he completed a

working paper presenting a fair and straightforward distillation of Oppenheimer's record. Then came Walker's round-the-clock efforts to complete the thermonuclear chronology, the successful plan to bring the chronology to the attention of the new President, and the Wheeler incident, which continued to haunt Borden into the spring of 1953, as both J. Edgar Hoover and Gordon Dean faulted the Joint Committee (and by implication Borden) for lax security practices revealed by the Wheeler case.[33] In one way or another, all the issues with which Borden had been struggling for four years seemed to be coming to a head.

SECURITY AND CANDOR

During Strauss's first six weeks at the White House he had little time for Borden, Oppenheimer, or *Candor* as he tried to protect the Commission's nuclear projects from the Administration's efforts to balance the budget. Because Borden was persona non grata in Administration circles after the Wheeler incident, any contacts with Strauss must have been informal and discreet. The first recorded contact between the two men in 1953 occurred on April 28, when Borden called Strauss's office at the White House and arranged to bring over "a paper," which he delivered personally on the afternoon of April 30. Borden's call may have been related to launching an open attack upon Oppenheimer. That same day Strauss had telephone conversations with six other men who were deeply involved in the movement.[34]

The medium of attack was to be an anonymous article in the May issue of *Fortune* magazine. The author, the public was to learn months later, was Charles J. V. Murphy, an editor of *Fortune* who had served as an Air Force reserve officer with Secretary Thomas K. Finletter. Murphy's article purported to summarize over a period of six years Oppenheimer's pernicious influence on the development of nuclear weapons, especially the hydrogen bomb. Rife with inaccuracies and oversimplifications, the article cast a sinister connotation on many events familiar to those in the atomic energy establishment: the lack of progress on thermonuclear development at Los Alamos during the years when Oppenheimer dominated the Commission's weapon development policies through the general advisory committee; Oppenheimer's opposition to Teller's demand for a second weapon laboratory; Oppenheimer's leadership in opposing an accelerated thermonuclear program in 1949; and his subtle efforts to discourage scientists from joining the project after 1950.[35]

Murphy, however, gave much more attention to another conflict less familiar to those in atomic energy circles. This dispute involved Oppenheimer's disagreements with Air Force officials over the role of air power in nuclear war. As Murphy explained it, "a life-and-death struggle" had developed over national military policy "between a highly influential group of

American scientists and the military." The "prime mover among the scientists" was Oppenheimer, who had "no confidence in the military's assumption that SAC [Strategic Air Command] as a weapon of mass destruction is a real deterrent to Soviet action." Murphy supported his thesis with a facile and oversimplified account of Oppenheimer's alleged success in subverting a series of study projects financed by the military to investigate some strategic and tactical implications of nuclear war. These studies included Project *Charles* at the Massachusetts Institute of Technology to evaluate defense systems against atomic attack, the creation of the Lincoln Air Defense Laboratory in 1951 to study air defense systems, the *Vista* study at the California Institute of Technology in 1951 to investigate the tactical uses of nuclear weapons, and the Lincoln Summer Study in 1952 to determine the feasibility of a continental air defense system against a Soviet nuclear attack.[36]

In what appeared to be an accurate description of the fears and suspicions circulating at the highest levels of the Air Force at that time, Murphy explained how Oppenheimer and other scientists close to him allegedly undermined the original intent of these studies and transformed them into clever repudiations of the Air Force doctrine of strategic bombing. By summer 1952, Murphy declared, Oppenheimer and his associates were united in a sinister conspiracy calling itself ZORC (based on the initials of the four alleged conspirators). ZORC, Murphy alleged, was determined to strip the United States of its nuclear superiority in a misguided and naive hope that such action would reduce the threat of nuclear war.[37]

Strauss was not the only man of influence in Washington to be aroused by Murphy's innuendoes. On May 12 Senator Joseph R. McCarthy called on J. Edgar Hoover to discuss the possibility of starting an investigation of Oppenheimer. McCarthy hinted at bipartisan support when he noted that Senator Stuart Symington, a Democrat and former Air Force Secretary, was concerned enough about Oppenheimer's controversy with the Air Force to consider an investigation. Hoover tried to discourage McCarthy by suggesting that such a move might involve a jurisdictional dispute with the Joint Committee on Atomic Energy or the Jenner committee. But Hoover's main concern was Oppenheimer's broad popularity, especially among scientists. Whatever the committee decided to do about Oppenheimer, Hoover advised, "should be done with a great deal of preliminary spade work" so that, when the investigation became public knowledge, the committee "would have substantive facts upon which to predicate its action."[38] Strauss, who was in close contact with the FBI at the time, must have found the threat of a McCarthy investigation alarming. Not only would it put the Administration on the defensive on the Oppenheimer case, a position Strauss would not have relished, but it could also stir up enormous popular support for Oppenheimer if the case presented against him was not convincing.

By this time *Candor* was beginning to enter Strauss's field of vision, perhaps for the first time, and with it came a deepening concern about Oppenheimer's influence on Administration policy. In February, when Eisenhower had first discussed the report of the disarmament panel with Oppenheimer, *Candor* was a fresh idea, if somewhat naive and impractical. But since the death of Stalin in March, the President had taken a more optimistic view toward relations with the Russians and in a speech to newspaper editors on April 16 had invited the new Soviet leadership "to awaken . . . to the point of peril . . . and to help turn the tide of history." The more seriously the President and others within the Administration took it, the more worried Strauss became. The planning board of the National Security Council had appointed a special committee to meet with Vannevar Bush, a member of the disarmament panel, to draw up recommendations for implementing the panel's report. On May 8 the committee endorsed most ideas of the Oppenheimer report in a paper distributed as NSC 151 to members of the council, its staff, and most likely to Strauss.[39]

The committee thought that the government could acquaint the American people with the nature of the arms race without causing them "to lose heart in the present struggle or to seek a solution through preventive war." Neither could the proposal require any release of technical data on nuclear weapons or any compromise of intelligence sources. At the same time, the committee noted, the *Candor* proposal would require an important change in existing policies. The government would be releasing not only certain facts about the arms race but also its official analysis of those facts. And to be effective the release could not occur on just one occasion; it would have to take place over a period of time. Such a plan would require some understanding by the Congress and some mechanism for deciding what information should be released and how.

The committee then proceeded to outline the kinds of information to be released; the essential principle was that the government would not continue its "negative" policy of releasing fragments of information only when pressed but rather would adopt a "positive" policy of continuous publication of information. "It would mean that the President and his principal officers would regularly take the people into their confidence in the conviction that in a democracy an informed public is the best safeguard against extreme public reactions." The committee recommended that specific information be released on the degree of defense possible and that the statement be tied to the panel's recommendations on continental defense.

One of the touchiest topics was the proposed description of the United States stockpile of nuclear weapons. Stopping far short of the panel's recommendations, the committee did not propose to release actual numbers of weapons but to speak rather of the growing destructive power of stockpiled weapons, perhaps only in terms of the number of square miles that would be devastated by such a weapon. The American people would

be told that the feasibility of thermonuclear weapons had been demonstrated, but it was not yet clear how thermonuclear weapons would alter the nature of atomic warfare in view of the already enormous destructive capability of fission weapons. As for Soviet capabilities, the nation would learn that within two years the Soviet Union would have "a stockpile numbered in the hundreds, and not many years thereafter in excess of a thousand."

OPPENHEIMER AND CANDOR

Now that *Candor* was becoming the centerpiece in the Administration's plans for responding to the dangers of thermonuclear war, Strauss did not dare to attack the proposal directly, although his every instinct must have rebelled at any significant release of weapon information that might help the Soviet Union. One recourse was to point to the disadvantages of *Candor* in his discussions with the White House staff. Another was to undermine Oppenheimer's influence and, by raising questions about the scientist's security record, perhaps remove him from the Administration's policy councils altogether. The latter course suggested that Strauss and Borden might cooperate in seeking an answer to the old question of Oppenheimer's reliability.

By mid-May 1953 Borden was devoting most of his time at the Joint Committee to the Oppenheimer case and continuing salvos against the Commission in the Wheeler security controversy. Perhaps at Strauss's instigation, the FBI asked the Commission's security office to forward any information it received about Oppenheimer's plans for foreign travel, a move suggesting that Oppenheimer's activities abroad might somehow risk a compromise of classified information. One week later Borden called Waters at the Commission's security office to ask whether there was "anything new" in the Oppenheimer case. Before ending the call Borden asked Waters to send him Oppenheimer's security file.[40]

With Cotter's working paper on Oppenheimer already in hand, Borden did not need Oppenheimer's file for a quick review of the facts but rather for a thoughtful study of every shred of evidence, every implication and nuance that might shed some light on the Oppenheimer mystery. Except for a brief interruption on May 19 and 20 for another acrimonious exchange of correspondence with the Commission on the Wheeler incident, Borden buried himself in the Oppenheimer case. After wrestling in his mind one more time with each scrap of evidence, he compiled fifteen pages of questions ranging from serious to frivolous. His questioning, legitimate, improper, and silly, implied that Oppenheimer had been unjustly shielded from the requisites of a thorough security review.[41]

Gradually Borden began to see the Oppenheimer case in the same light in which he viewed the whole hydrogen bomb development. That is,

just as he believed that the thermonuclear program had been neglected through lack of attention, so he thought that the Oppenheimer case had been ignored by being "kicked under the rug." The more he thought about them, the more Borden analyzed the two issues in the same vein, concluding that the same kind of attitude, almost the same kind of conspiracy, was working with respect to the H-bomb issue and Oppenheimer. But the Oppenheimer question needed, Borden thought, a single document, like the thermonuclear chronology, that pulled together all the disparate facts to show the Commission's reluctance to face the Oppenheimer question squarely.

Strauss in the meantime was becoming more and more preoccupied with Oppenheimer and *Candor*. On May 25 he confided to an FBI official his suspicion that Oppenheimer's communist sympathies were not yet dead. A Commission report, which Strauss had requested, revealed that David Hawkins, a physicist and former member of the Communist party, had been hired to work at Los Alamos during the war at Oppenheimer's instigation and had remained there until July 1947. Strauss also described in detail his opposition to Oppenheimer's attempt to bring Felix Browder, the son of the American Communist party leader, to the Institute for Advanced Study on a fellowship. Strauss's anxieties had been aroused because Browder was reportedly not an outstanding scholar and because Oppenheimer, in Strauss's estimation, had employed questionable tactics in trying to push through the appointment.[42]

Just the week before, Strauss had discovered that Oppenheimer had called the White House to request a meeting with Eisenhower on an urgent matter that he would reveal to no one but the President.[43] Privately, Strauss could only guess that the request had something to do with the forthcoming meeting of the National Security Council to discuss the Administration's plans for *Candor*. Or was it possible that Oppenheimer had caught wind of the renewed interest in his security file and was trying to protect himself? Strauss asked the FBI whether it would cause any difficulty if he mentioned his concerns about Oppenheimer to the President when Strauss saw him that afternoon; the FBI had no objection. Strauss's misgivings about Oppenheimer were also heightened by a report from the Commission that Oppenheimer had written a letter to the New York security office outlining his plans to visit Brazil in June and Japan in September.[44] Could these trips conceivably be designed to provide Oppenheimer a chance to talk freely with scientists abroad or possibly even with communist agents? Strauss requested a copy of the letter immediately.

Strauss could take some satisfaction in the fact that he had been alert enough to prevent Oppenheimer from catching the President unaware either at his private session with Eisenhower, now scheduled for May 29, or at the council meeting on *Candor* on May 27. But the results of that meeting were hardly comforting to Strauss, who saw *Candor* as foolishness

at its best and a threat to national security at its worst. Much discussion at the council meeting reiterated the positions taken on February 25: the President's infatuation with the *Candor* idea despite its incompatibility with his strong instinct for secrecy and the opinions of Secretaries Wilson and Humphrey that *Candor* would scare the American people. In the end the argument seemed to move the President in the direction of *Candor*, but he still had reservations. These led him to the idea, and then to a decision, that all government statements in the future should avoid any reference to thermonuclear weapons and should use only the generic term "atomic weapons." Before making a final decision, Eisenhower wanted to see a draft of a speech that he might use to launch the project.[45]

Oppenheimer's new success in promoting *Candor* with the President must have heightened Strauss's anxiety about the scientist's influence over national security policy. If Oppenheimer was a security risk—a possibility Strauss had been unable to reject—his support of *Candor* could be interpreted as an attempt to compromise atomic secrets. The gnawing doubts that Oppenheimer's security file had raised in the minds of Strauss and Borden were now more pertinent than ever before.

For information on security matters Strauss had well-established lines of communication with both the Commission and the FBI. Not only could he telephone Dean and J. Edgar Hoover directly, but he also had informal contacts at the working level in both agencies through Bryan LaPlante and Charles Bates, Hoover's liaison agent with the Commission. During the next year Bates would be an inconspicuous but almost daily visitor to the Commission's headquarters building.

On June 4 Strauss called the FBI and asked once again to see the bureau's summary of the Oppenheimer file. When Bates arrived at Strauss's White House office a few hours later with the summary, Strauss told him that Eisenhower had drafted him against his wishes to serve as chairman of the Commission. Strauss had warned the President that "he could not do the job" if Oppenheimer were connected in any way with the program. Strauss had spoken very frankly to the President about Oppenheimer and intended to do the same with Robert Cutler, who handled national security affairs for the President. Approaching Cutler would be tricky, Strauss said, because Cutler served with Oppenheimer on the Harvard Board of Overseers and "did not like to hear criticism of his 'friends.' "[46]

Strauss would have been even more concerned had he known about a new development in the Oppenheimer affair. During Oppenheimer's visit to Washington the previous week, the scientist had asked Dean to extend his consultantship with the Commission for another year beyond its expiration date of June 30. Time was short; Oppenheimer would be leaving for Brazil within two weeks, and by the time he returned Dean would no longer be chairman. It was also quite likely that Dean and Oppenheimer knew that Strauss would by then be in charge of the Commission, a situation that

would end all chances for Oppenheimer's reappointment. In light of the strong opposition to Oppenheimer revealed by Murphy's article, continuation of his Commission consultantship was the only way of retaining Oppenheimer's voice in the government in national security affairs, and specifically *Candor*. Without taking time to discuss the issue with the Commission or the staff, Dean instructed the general manager's office to renew Oppenheimer's contract. The renewal was dated June 5, perhaps the most fateful day in Robert Oppenheimer's life. As Strauss wrote nine years later: "It was this contract which involved the AEC in the clearance of Dr. Oppenheimer and which required that the Commission, rather than some other agency of the Government, be made responsible to hear and resolve the charges against him."[47]

By the first week in June the future looked promising for *Candor*. Oppenheimer's renewed contract assured that *Candor* would continue to be well represented in national policy councils. There was also every assurance that the President's speech launching *Candor* would be drafted quickly and efficiently. The task had been assigned to Charles D. Jackson, the ebullient editor of *Time* magazine who had joined the Eisenhower campaign as a speech writer in 1952. Far more imaginative and adventuresome than his boss, Jackson was constantly bombarding the President with all sorts of ideas for selling the Administration's policies to the American public. Operation *Candor* had struck a resonant chord in Jackson, and he took up the cause with enthusiasm. He even went so far as to sound out his friends in the advertising business in New York on how the job might be done. As Jackson often discovered, however, he quickly moved far beyond the President's wildest expectations. Eisenhower refused Jackson's suggestion that he use the dedication of the nuclear submarine prototype in Idaho as an occasion for announcing *Candor*. The President was no more receptive to a State Department draft of a *Candor* kick-off speech that Jackson submitted about the middle of June.[48]

While Jackson was trying to bring the President's thoughts on *Candor* into focus, the idea of informing the American people about the arms race was gaining public currency. For one thing the informed public knew that the study by the State Department panel existed although the full contents of the report had not been released.[49] Oppenheimer, however, known to be chairman of the panel, removed some ambiguity in June, when *Foreign Affairs* published an article based on his February speech before the Council on Foreign Relations.[50] Oppenheimer had been careful to separate his personal views from any government policy discussions, and he had cleared a draft of the article with the White House. But anyone who knew anything about the situation could see that Oppenheimer was not writing in a vacuum. In describing the arms race, Oppenheimer complained that "I must tell about it without communicating anything. I must reveal its nature without revealing anything."

Oppenheimer did relate information that had already been released about the Soviet program, namely that the Russians had accomplished three nuclear explosions and were producing fissionable material in substantial quantities. He also stated his own personal guess that the Russians were about four years behind the United States and that their scale of operations was not as big as that of the United States four years earlier. The American people, however, should know "quantitatively and, above all, authoritatively where we stand in these matters." Oppenheimer confessed that he had never discussed the classified facts about the nuclear arms race with any responsible group "that did not come away with a great sense of anxiety and somberness at what they saw." The United States' four-year lead over the Russians would mean little as the nuclear stockpile grew; America's twenty-thousandth bomb would be of small comfort when the Russians had their two-thousandth. Then he added the sentence that would long outlive him: "We may be likened to two scorpions in a bottle, each capable of killing the other, but only at the risk of his own life."

One obvious frustration Oppenheimer encountered in writing his article was that he could say nothing at all about thermonuclear weapons, which lay at the center of the panel's original concern and undoubtedly sparked Eisenhower's interest in the panel report. The frustration was the same for Eisenhower, Dean, or anyone else in the government who was privy to the facts. On the one hand, there was a natural tendency to withhold information about the thermonuclear test as much as possible; on the other, the results were so obviously significant to national security that others had to know.

Dean had sensed this feeling late in May 1953, when he saw for the first time a special film prepared by Joint Task Force 132 on the Enewetak test in November 1952. The film explained in detail the physical principles involved, the working components of the *Mike* device, and the elaborate preparations taken to gather technical data about the detonation. Although the film contained enough Hollywood clichés to annoy many viewers, it did effectively build suspense for more than an hour as the spine-tingling moment of detonation approached. The climax came in the extraordinary technicolor shots of the detonation, supported by statistical data that helped to put the incredible scale of the explosion in perspective.[51]

Dean was so impressed that he immediately called Robert Cutler at the White House to urge that the President see the film. On June 1, the President, the Cabinet, the National Security Council, the Joint Chiefs of Staff, and the Commissioners assembled in the East Wing theater to view the uncut, top secret version. The following day Dean and the President discussed how some of the more sensitive technical information in the film could be deleted so that a shorter version, still classified secret, could be shown to a larger audience.[52] Within the Administration the film probably

did far more than Oppenheimer's article to stimulate interest in Operation *Candor*.

Dean took up the *Candor* theme in the closing moments of his valedictory press conference as chairman of the Commission on June 25, 1953. Always the practical man, Dean cited the need to amend the Atomic Energy Act to give the Commission more flexibility in dealing with other nations and the need to release more technical information to industry. But most important of all in Dean's estimation was the release of information about atomic weapons in order to develop an informed public opinion, "which is the only realistic base upon which our defense and foreign policies can be built in the atomic age." Both Oppenheimer's and Dean's statements received wide attention in the American press. As the *Christian Science Monitor* noted, "A strong current has begun to flow in the direction of less secrecy and more information for the American people about the atom."[53]

STRAUSS AND CANDOR

The current of public opinion running in favor of *Candor* continued to pick up speed during the first week of July 1953. In response to a question about the Oppenheimer article and the Dean valedictory, the President admitted at a press conference on July 8 that

> personally I think the time has arrived when the American people must have more information on this subject, if they are to act intelligently. . . . I think the time has come to be far more, let us say, frank with the American people than we have been in the past.

As the new chairman of the Commission and as a member of Eisenhower's inner circle of advisers on national security, Strauss could not entertain for a moment the idea of contradicting the President, but he was not ready to give up the fight. He would not, as the *Washington Post* hoped in an editorial on his appointment, move with the *Candor* current.[54]

Even within the Commission Strauss had to be careful not to oppose *Candor* openly, but he did do so indirectly. His first opportunity came when he received a comprehensive analysis of the Commission's policy on security and classification, which Smyth had prepared in the closing weeks of the Dean administration. Smyth had concluded that it would be in the national interest to permit a greater exchange of technical information with Belgium, Canada, and the United Kingdom and to release much more data on reactor technology to American industry. In some areas, like thermonuclear weapons, continuing the most severe security restrictions was in order, but Smyth accepted the general thesis of the Oppenheimer panel that the public should know more about the nature of the arms race.[55]

Strauss had also received a letter from the Joint Committee on Atomic Energy citing the favorable comments by the President and Dean on *Candor* and requesting a detailed study of the need to revise the Atomic Energy Act to permit a wider dissemination of technical information. Without expressing his views on these specific questions, Strauss suggested that both the Smyth paper and the Joint Committee letter involved the same general issues, which he proposed to discuss in September, when he planned to take his fellow Commissioners on a weekend retreat at White Sulphur Springs, West Virginia.[56]

Some hint of Strauss's current views on security appeared in his correspondence with Senator Alexander Wiley, chairman of the Senate Foreign Relations Committee. Wiley wrote Strauss of his deep concern about American vulnerability to a Soviet nuclear attack, commenting that until the American people were acquainted with the given facts of the nuclear arms race they would be living in a "fool's paradise." In his reply Strauss did not mention *Candor*, but he was quick to stress the need for balancing the value of such information to the American people and the value of the same information to potential enemies. "All of us pray," he wrote Wiley, "that history will vindicate the wisdom of our judgments, both as to what is revealed and what is continued secure."[57]

The Commission's staff had numerous occasions during Strauss's first month as chairman to observe his sensitivity to all matters dealing with security and the control of information. On July 14 he questioned an earlier Commission decision authorizing the transmittal of unclassified drawings of a Brookhaven accelerator to a group of high-energy physicists in Europe. Strauss and Murray were both fearful that the drawings, although unclassified, would help other nations build accelerators to produce fissionable material. When Smyth assured him that this was not likely, Strauss still did not believe that the Commission would receive any direct benefit from the release and chose to delay a decision until he could discuss the problem with Ernest Lawrence. The clear implication was that the Commission was unlikely to benefit from research performed by other countries with American materials or technical data. Reaching back to the period of his earlier service on the Commission, Strauss requested information on whether a technical report had been received from Norway on research conducted with a radioactive iron isotope that the Commission had released over Strauss's objection in 1949. Strauss also opposed releasing an unclassified report on the Commission's reactor development program to the Joint Committee and expressed grave concern over the numbers of emergency clearances and missing top secret documents.[58] For old-timers on the staff Strauss's readiness to pounce on security matters reminded them of earlier days.

Strauss was careful to make no public statements about *Candor* but he worked behind the scenes to counter the Oppenheimer and Dean state-

ments and even, in a subtle way, the remarks by the President himself. After April 28, when he apparently first discussed with Charles Murphy the article exposing the alleged Oppenheimer conspiracy, Strauss was in frequent contact with Murphy and most probably helped him to prepare a second article, which appeared in the August 1953 issue of *Fortune*. More temperate and accurate than the first article, the second attempted to refute Oppenheimer's main arguments in *Foreign Affairs* without mentioning the insinuations of conspiracy in the May article. By reporting the President's remarks in the opening paragraphs without comment, Murphy gave his readers an opportunity to apply his criticisms of Oppenheimer's position indirectly to the President. The Murphy article contained arguments typically used by Strauss to support rigid security for weapon information and particularly for stockpile figures. Also like Strauss, Murphy placed information about nuclear power plants in a separate category as potentially suitable for release to the public. On July 16, the day Murphy sent his manuscript to the printer, he called Strauss's office for some last-minute advice. Almost as a credit, the article included one photograph, a portrait of Strauss with the caption: "Strauss believes in keeping a tight lid on information about U.S. atomic weapons."[59]

Although Murphy and Strauss had been too circumspect in the *Fortune* article to be accused of challenging the President, the article left no doubt about Strauss's position in the minds of Administration leaders. C. D. Jackson brought up the subject over cocktails with Strauss on August 4. Strauss reassured Jackson that he was neither involved in a feud with Oppenheimer nor opposed to the President's speaking to the nation on *Candor* but that he did object to the use of "any comparative arithmetic" on American and Soviet nuclear stockpiles.[60]

JOE 4

Any relaxation of security that Operation *Candor* might have inspired was suddenly blocked by new developments in the international arms race during August 1953. On August 8, in a speech before the Supreme Soviet in Moscow, Premier Georgi M. Malenkov announced that the United States no longer had a monopoly of the hydrogen bomb. In response to press inquiries Strauss blandly replied that the United States had never assumed that the bomb was beyond Soviet capabilities and for that reason had embarked on its own project three years earlier.[61]

On August 12 Strauss and the Administration received from the Air Force long-range detection system the first fragmentary evidence that Malenkov's statement was not a hollow claim. The Soviet Union had apparently conducted its fourth nuclear weapon test, which the Americans called *Joe 4*. Because the detonation had been quite powerful, the Americans

thought it was possibly a thermonuclear device, but direct evidence would not be available until airborne samples of radioactive debris from the test could be collected and analyzed. In the meantime it was extremely important for intelligence reasons to prevent the information from becoming public; the longer that event could be postponed, the more easily could the government conceal the degree of efficiency and accuracy of the long-range detection system. Perhaps for this reason, Strauss did not immediately inform his fellow Commissioners but chose rather, as special assistant to the President, to work with the White House staff in drafting announcements that might be used under a variety of circumstances.[62]

Strauss and Jackson met with the President in New York on the morning of August 19 to discuss both *Candor* and the Soviet test. Eisenhower, although reluctant to make any announcement, finally approved for later release a simple statement to the effect that the Russians had conducted an atomic test. Later the same day in Washington, after conferring with the other Commissioners and State Department and CIA officials, Strauss decided not to release any announcement until information from the first samples arrived later in the evening. In Strauss's office at the Commission headquarters at eight o'clock, scientists from the Air Force long-range detection system stated conclusively that "a fission and thermonuclear reaction had taken place within Soviet territory." Despite State Department assurances that the Russians were not likely to elaborate on Malenkov's statement of August 8, Strauss learned at ten-thirty that evening that Moscow radio had announced a Soviet test involving a hydrogen reaction several days earlier. After redrafting the public announcement to contain a reference to thermonuclear reactions, Strauss decided that he would have to clear the release with the President in view of Eisenhower's order not to mention the hydrogen bomb in public statements. Because the President was at that time flying to Denver, Strauss was unable to clear the release until almost midnight. The next day some of the nation's newspapers carried the headline: "REDS TEST H-BOMB."[63]

For most Americans, perhaps even for Strauss and others in the Administration, that simple statement sufficiently described Soviet capabilities. The hydrogen bomb was more than a weapon; it was a symbol of military capability that gave Oppenheimer's analogy of "two scorpions in a bottle" a new and more terrible significance. As Congressman Cole of the Joint Committee pointed out to the American Legion in October 1953, the Russians had detonated a hydrogen weapon "only nine months after our own hydrogen test." Although Strauss, like all other members of the Administration, was enjoined by the President from public comment on hydrogen bombs, Strauss did confide to others in classified discussions his fears that the Soviet Union had bypassed some earlier refinements of fission weapons and had concentrated on thermonuclear designs several years earlier, probably before the United States accelerated its own thermonuclear

program in 1950. The President himself in a press conference on September 30, 1953, had referred to the Soviet achievement as the creation of a hydrogen bomb.[64]

The fact was, however, that neither the Commission nor the Administration had any incontrovertible evidence on August 20 or even on October 12 that the Soviet Union had developed a thermonuclear weapon. As the Commission's original statement carefully put it, the initial evidence on August 20 merely confirmed that the detonation involved both fissionable and thermonuclear materials. It was apparent that the general statements made in 1953 and later years about Soviet superiority in thermonuclear weapon development were far from the whole truth. The Soviet scientists had *not* detonated a "true" hydrogen weapon within nine months after *Mike*. They had *not* developed an airborne thermonuclear weapon before the United States. And it was *not* true that the Americans had taken the wrong path in using deuterium while the Russians had struck out directly for the more practical lithium-deuteride approach.

Why then did these misconceptions arise and then persist in discussions of national security issues? First, the inherent limitations of intelligence-gathering systems made it impossible in 1953, or even many years later, for American scientists to construct an authoritative description of all features in *Joe 4*. The nation's most experienced and talented scientists could and did disagree in interpreting some evidence. Second, and more important, the extreme secrecy that surrounded both the American thermonuclear program and the intelligence reports on Soviet developments caused much confusion. Some Commissioners apparently were not apprised even of the simple facts deduced by the scientists.[65] Although some facts did leak into the public press, distortions inevitably occurred as reporters speculated on the fragmentary evidence and the Commission for security reasons refrained from confirming or denying the accuracy of such speculations. For more than two decades the most elementary facts about *Mike* and *Joe 4* were unconfirmed, and a full description of these devices will probably not be revealed in this century. Lacking a full understanding of the qualitative differences between the Soviet and American devices, Strauss and others in the Administration had no compunctions in assuming the worst about the Soviet thermonuclear challenge.

THE QUEST FOR CANDOR

During summer 1953, Jackson by his own admission had had little success in producing an acceptable draft of the *Candor* speech for the President. No matter what approach he took to the meaning of the thermonuclear weapon, Jackson found that he ended up with a gruesome story of human destruction. Unless the Administration could find some positive hope to

present to the American people and the world, the horrifying consequences of nuclear warfare would simply generate fear, and, as the President remarked, the public could not be expected to reach an intelligent understanding in an atmosphere of fear.[66]

Joe 4 seemed to heighten the tension that the threat of thermonuclear weapons had already created in both the government and the nation. On one side, *Joe 4* represented a massive increase in the Soviet Union's nuclear capability, a trend that seemed to make the arguments for *Candor* even more urgent. There now seemed to be that much less information about American weapons to conceal from the Russians, and it was all the more imperative to acquaint the American people with the truth of their predicament, however unpleasant that knowledge might be. On the other side, it was possible to argue, as some did, that *Joe 4* required a tightening of belts, a new dedication to enlarging the United States' own nuclear capabilities, and a need to protect every technical secret that still remained in American hands.

Eisenhower himself apparently felt these same kinds of tensions. Although he was among the most conservative of his Administration in wanting to seal off the details of weapon technology from the nation's potential enemies, the President refused to abandon his initial conviction that the world needed to understand the awesome dangers of the thermonuclear age if unspeakable disaster was to be avoided. Thus, despite his dissatisfaction with Jackson's drafts, Eisenhower continued to push for *Candor*. By early September, Jackson, with help from his friends in the National Advertising Council, had proposed an elaborate scheme for a series of seven television programs beginning in October. The President himself would lead off with his own statement on "The Safety of the Republic in the Atomic Age." On successive Sundays Cabinet officers and other Administration officials would participate in round-table discussions similar to those Eisenhower and some of his Cabinet members had presented on June 3, 1953. These discussions would cover international affairs, the capabilities of the Soviet bloc, the need for strengthening the free world, the dangers of subversion at home, and the role of civilians in an age of peril.[67]

From the outset Jackson's television series seemed doomed to failure. Some government officials, J. Edgar Hoover for example, were reluctant to participate; of equal concern to Jackson were those anxious to speak their minds. Jackson had been careful to exclude Defense Secretary Wilson, who had already demonstrated his vulnerability to baited questions in press conferences. Even with careful selection of participants and preparation of a script, it would be difficult to predict the impact of the programs in the still relatively unfamiliar medium of television. Given the exceptional sensitivity of the subject, it was frightening to contemplate the potential damage of a casual remark in a series of relatively unstructured discussions.[68]

In the end two developments during September 1953 killed the television series. First, the idea itself inevitably leaked to the press with disastrous consequences; now, no matter what the President decided, some of the press would probably accuse him of being less than candid about *Candor*. Second, "a Babel of conflicting statements," as columnist Arthur Krock put it, developed about the imminence of the Soviet thermonuclear threat. Strauss himself, in a speech before the National Security Industrial Association on September 30, voiced publicly for the first time his fears that the Soviet Union had bypassed research on fission weapons to beat the United States to the punch in developing the hydrogen bomb. Arthur S. Flemming, director of the Office of Defense Mobilization and an advocate of industrial dispersion, had stated in a public report on October 4 that "Soviet Russia is capable of delivering the most destructive weapon ever devised by man on chosen targets in the United States." Congressman Cole, remarking that he preferred "financial ruination" to "atomic devastation," urged the expenditure of $10 billion for air defense. Val Peterson, whose Federal Civil Defense Administration budget had been severely cut by the Eisenhower Administration, saw no hope for a peaceful settlement of the Cold War. But Secretary Wilson thought the Soviet Union was three or four years behind the United States in developing both thermonuclear weapons and the aircraft to carry them.[69]

These and other contradictory statements on the threat posed by *Joe 4* had reached epidemic proportions in the nation's press by the second week in October. After a long discussion of the problem at the National Security Council meeting on October 7, 1953, Eisenhower decided to accept Strauss's proposal that all statements about thermonuclear weapons by Administration officials first be cleared with the chairman of the Atomic Energy Commission.[70]

The next day at his weekly press conference, Eisenhower read a carefully prepared statement on *Joe 4*. The Soviet Union had tested "an atomic device in which some part of the explosive force was derived from a thermonuclear reaction." The Soviet Union now had "the capability of atomic attack on us, and such capability will increase with the passage of time." The President did not "intend to disclose the details of our strength in atomic weapons of any sort, but it is large and increasing steadily." The statement, repeating words used by Strauss in his September 30 speech and by Senator Hickenlooper, a conservative Republican member of the Joint Committee, seemed to kill a central proposal by the Oppenheimer panel for Project *Candor*. That statement, plus the President's assignment of Strauss as the Administration's watchdog over thermonuclear information, led the press to conclude that *Candor* was now dead.[71]

The President, strangely enough, did not seem to share that view. Because he believed that the people of the United States and of the world could be given the facts they needed about the dangers of nuclear warfare

without revealing such details, he had never considered detailed revelations about thermonuclear capabilities or the weapon stockpile an essential element of *Candor*. But Eisenhower wanted some positive suggestion that would give hope for the future. He was intrigued with developing an idea that had occurred to him during his vacation in Denver during August. When he had returned to Washington briefly for Chief Justice Fred M. Vinson's funeral on September 10, he had asked General Robert Cutler, who handled national security affairs, to convey his idea to Strauss and Jackson. "Suppose," the President suggested, "the United States and the Soviets were each to turn over to the United Nations, for peaceful uses, X Kilograms of fissionable material."[72]

Strauss may well have taken some comfort in the President's suggestion as a move away from what he saw as Oppenheimer's dangerous and naive proposal for *Candor*. But were Oppenheimer and his friends merely naive, or were there sinister motives behind their continuing efforts to promote *Candor* even in the face of the terse Soviet announcement of *Joe 4*? How could an intelligent person like Oppenheimer support such a hair-brained idea when the Soviet Union was obviously out to overtake the United States in nuclear weapon development? The gnawing doubts about Oppenheimer's loyalty that Strauss had shared with Borden since 1950 continued to haunt both men.

Borden seemed to drop out of Strauss's world after leaving the Joint Committee at the end of May 1953. Except for one telephone conversation on July 16, there is no evidence that the two men communicated during the remainder of that year. Borden, unable to fathom the Oppenheimer mystery posed in the scores of questions that he had assembled on the subject, left Washington for his vacation retreat near the St. Lawrence River. There he would continue to ponder the shadowy record of Oppenheimer's past and the scientist's impact on the development of nuclear weapons.[73]

Strauss had no such opportunity to retreat from the Oppenheimer enigma. As chairman of the Commission, he was now directly responsible for protecting what he saw as the little that was left of the nation's supremacy in nuclear weapon technology, and he now knew to his dismay that his future as a government official was closely linked to Oppenheimer's. Dean's action in extending Oppenheimer's consultant contract had seen to that, and for Strauss there was no easy escape. He and J. Edgar Hoover had agreed that it would be dangerous to attack Oppenheimer directly unless there was convincing evidence against him.[74] Strauss was not eager to risk his cordial relations with America's scientific giants, something he greatly cherished, and his leadership of the Commission in a dra-

matic showdown with a scientist as popular and prestigious as Oppenheimer. Patience and the expiration of Oppenheimer's contract on June 30, 1954, might take care of the Oppenheimer problem. But in the meantime Strauss could not afford to overlook any scrap of evidence that might convince the public that Oppenheimer could not be trusted. If such information should fall into his hands, Strauss would have no choice but to risk his political future to protect the national security.

During summer 1953, Strauss pursued his discreet inquiries of Oppenheimer's activities with the help of Bryan LaPlante, now his security aide, and Charles Bates of the FBI. Strauss continued to be concerned about Oppenheimer's plans for foreign travel, presumably because trips abroad would offer him a chance to contact communist agents or even to slip behind the Iron Curtain. When the first intelligence reports on *Joe 4* arrived, Strauss's level of anxiety rose. On August 18, the day before the Soviets announced *Joe 4*, Strauss asked for Oppenheimer's security file, which had remained at the Joint Committee since Borden requested it on May 14. The next day, before meeting with the President to discuss *Joe 4* and *Candor*, Strauss complained privately to his fellow Commissioners about Oppenheimer's request for classified defense documents. The Commission could refuse Oppenheimer only with difficulty because Dean had extended Oppenheimer's consultant contract in June. Strauss was further annoyed to learn on August 31 that Oppenheimer had been seeking information from the Commission staff about the recent Soviet test series, apparently in disregard of Strauss's instructions that all such information would be disseminated only through his office. In an attempt to head off Oppenheimer, Strauss told the staff that he would speak to Oppenheimer personally on September 2.[75]

Unknown to his fellow Commissioners, Strauss had already been in direct contact with Oppenheimer, who had called Strauss at his Virginia farm on August 28 for an appointment in Washington on September 1. When Strauss had suggested an afternoon meeting on that day, Oppenheimer had begged off, saying that he had an important appointment at the White House. Anxious to know what Oppenheimer was up to, Strauss asked LaPlante to arrange to have Oppenheimer put under FBI surveillance during his visit to Washington. The bureau dutifully reported back on September 2 that Oppenheimer had not gone to the White House but had spent the entire afternoon in the men's bar of the Statler Hotel with columnist Marquis Childs. The surveillance also revealed that Joseph Volpe, Jr., a former general counsel of the Commission and Oppenheimer's lawyer in the Weinberg case, had visited Oppenheimer at the hotel for a half hour that evening. Volpe had then been trailed to a food store, where he purchased groceries and took them to the home of a former Commission employee who had worked as a special assistant to Chairman Lilienthal. Strauss guessed that Oppenheimer was giving Childs information for articles in the *Wash-*

ington Post supporting Oppenheimer's views on national security. The information that Volpe had visited the former Commission associate, a woman who, the FBI said, had a record of some association with communist-front organizations, conjured up images of illicit and possibly treasonable relationships reminiscent of those in which Oppenheimer had been involved during the 1930s. Oppenheimer's obvious lie to Strauss about his commitments for September 1 reinforced Strauss's conviction that Oppenheimer and his friends fell short of acceptable standards of morality and to that extent were less than fully trustworthy.[76]

NICHOLS AND OPPENHEIMER

After his morning conference with Oppenheimer on September 2, Strauss looked forward to a more pleasant meeting. He had invited Commissioners Murray and Zuckert to lunch with Major General Kenneth D. Nichols, Strauss's candidate to replace Marion W. Boyer as general manager. Nichols, a West Point graduate and a career Army officer with a Ph.D. in engineering, had served with General Groves in the Manhattan Project. Following World War II Nichols had been a consultant to the Joint Committee. Nichols already had a reputation for being tough, principled, and opinionated. Rejected outright for any position on the Commission staff in 1947 because of his strong ties to the Manhattan Project, Nichols had continually challenged the Commission's authority in military matters. With Oppenheimer, Nichols had raised the ire of the Air Force by advocating greater emphasis on tactical weapons; but in contrast with the Princeton physicist, Nichols was also counted among the staunchest proponents of the hydrogen bomb.[77]

The luncheon began with some reminiscences about the Manhattan Project, and then conversation turned to Oppenheimer's position on the hydrogen bomb and the renewal of his clearance in June. Murray seized the opportunity to explain how the contract with Oppenheimer had been executed. According to Murray, Dean had not consulted the other Commissioners before renewing the contract. Murray's inference was clear: once again in the interest of expediency unwarranted shortcuts had been taken to maintain Oppenheimer's clearance.[78]

The luncheon meeting cleared the way for Nichols to assume the office of general manager on November 1, 1953, with a clear mandate to carry out the atomic energy policies of the Republican Administration as interpreted by Strauss. For over a decade Nichols's position on the Oppenheimer case, although complex, had remained consistent. Intimately familiar with Oppenheimer's record, Nichols never shared Strauss's and Borden's fears that Oppenheimer might be a Soviet agent. Nevertheless Nichols maintained that Oppenheimer was a major security risk and should

not be granted clearance. Nichols had opposed granting Oppenheimer's clearance in 1942; when the war ended and the need for taking chances was past, Nichols attempted to instigate a review of all questionable clearances, including Oppenheimer's. Whenever possible Nichols encouraged officials, particularly in the Department of Defense, to discontinue consultation with Oppenheimer. Nichols was more or less satisfied with the progress made in gradually terminating Oppenheimer's various clearances. Now, as general manager, Nichols was in a position to complete the process.[79]

TOWARD THE PEACEFUL ATOM

During September and October 1953 the Oppenheimer case was a matter of chronic but not paramount concern for Strauss. Much higher on his agenda was the President's suggestion that the United States and the Soviet Union might divert equal amounts of fissionable material to peaceful purposes. At first Strauss did not see any practical advantage in Eisenhower's suggestion. What good would it do to contribute fissionable materials to peaceful uses if the United States and the Soviet Union both retained large amounts in the form of weapons? And how would it be possible to protect the contributed material from falling into the hands of an aggressor nation? Not willing to take his fellow Commissioners into his confidence on so sensitive a matter, Strauss confined his discussion of the subject to breakfast meetings with Jackson at the Metropolitan Club in Washington. From these sessions the new effort took the name of Project *Wheaties*.[80]

By mid-September Strauss began to think better of the idea and suggested that it be considered by an ad hoc committee on disarmament within the National Security Council. With the President's approval Strauss set out to put his ideas on paper. Starting with the assumption that any agreement with the Soviet Union "would be presently unenforceable by any known means," he concluded that any plan for partial or total atomic disarmament would have to be "clearly and unequivocally advantageous" to the United States and that any proposal would have to benefit the United States, even if the Soviet Union rejected it. Such an agreement would have to be "independent of reliance upon continued good faith or enforcement" because absolute accountability for all fissionable material produced would be impossible. The agreement would have to be acceptable to nonnuclear nations and could not rely on international ownership, control, or operation of any facilities within the United States or the Soviet Union.[81]

Building on Eisenhower's idea, Strauss proposed that all uranium and thorium mines be shut down for ten years. All plutonium production reactors would cease operation except for one facility in each country for producing radioactive isotopes for research. Each nuclear nation would de-

liver a fixed amount of fissionable material each month to a "World Atomic Power Administration." To provide maximum protection for the material, Strauss proposed that it either be stored as a highly diluted solution in underground tanks at some isolated location, such as Ascension Island, or be dispersed to a large number of scattered sites. Strauss acknowledged that the plan would not immediately reduce the threat of biological, nuclear, or conventional warfare, but it did offer "a means of impounding gradually the devastation of atomic warfare and, by its simplicity and plausibility, it would be likely to attract the adherence of the small neutrals and the enthusiastic support of plain people."

Strauss's preoccupation with the security aspects of the proposal was not likely to appeal to Eisenhower or Jackson, but the plan did embody the President's basic strategy—to approach world disarmament, not in one dramatic proposal, but in small steps in tune with existing realities and simple enough for the public to understand. Complex plans for balanced reductions of both nuclear and conventional armaments, such as those the State Department proposed in October 1953, were not amenable to presentation in a presidential address but would require months, if not years, of secret diplomatic negotiations. In autumn 1953 Eisenhower had no intention of limiting the Administration's efforts to diplomatic channels.[82]

Despite the debacle that had overtaken Operation *Candor* in September, Eisenhower had never abandoned the idea of speaking out on the growing dangers of nuclear warfare. Always before, the overwhelming pessimism of the *Candor* drafts had caused the President to hold back; but Strauss's plan, which offered small but positive hope for a way out of the nuclear dilemma, now seemed to make *Candor* possible. A special opportunity lay in the fact that the United Nations General Assembly was then meeting in New York. A speech there would give Eisenhower a world, rather than just a national, platform.

Late in October Jackson began to assemble the ingredients for a speech before the General Assembly. From the dozen drafts of the *Candor* speech, he could extract the grim statistics on the nuclear arms race: the destructive capability of the United States' nuclear stockpile compared to that of all the munitions used in World War II and the fact that the Soviet Union had the hydrogen bomb. From the State Department's latest proposal he could borrow material that would describe the trouble spots in Europe, Korea, and Southeast Asia that were breeding grounds for new global conflicts. From Strauss's paper he could extract the proposal for a positive contribution to world peace.

The essential structure and tone of the speech were fixed on November 6 when Jackson read his second draft aloud to the President, Strauss, and United Nations Ambassador Henry Cabot Lodge, but revisions continued apace. The fifth draft completed on November 28 barely survived a sustained attack by Secretary of Defense Wilson and his deputy, Roger M.

Kyes. Undaunted, Jackson immediately began work on a sixth draft, which he expected to have ready in a few days.[83]

THE BORDEN LETTER

Although both Strauss and Nichols would have been happy to see Oppenheimer excluded from national security information, neither man wanted to precipitate that action in a way that would damage the atomic energy program or their own effectiveness as government officials. They had bided their time too long on the Oppenheimer case to take any rash or ill-considered action. Yet, within a week after Nichols took over as general manager, William Borden, most likely without contacting either Strauss or Nichols, dispatched to the FBI a letter destined to change the lives of all four men.

On November 12, Lou B. Nichols, an FBI official in Washington, received a letter addressed to J. Edgar Hoover from Borden, whom he had known as executive director of the Joint Committee. After reviewing the extraordinary scope of Oppenheimer's activities in national security affairs since World War II, Borden concluded that Oppenheimer was and for some years had been "in a position to compromise more vital and detailed information affecting the national defense and security than any other individual in the United States." As chairman or as a member of "more than thirty-five important Government committees, panels, study groups, and projects, he [had] oriented and dominated key policies involving every principal United States security department and agency except the FBI." Then without so much as a sentence of transition, Borden went to the purpose of his letter: "to state my own exhaustively considered opinion, based on years of study of the available classified evidence, that more probably than not J. ROBERT OPPENHEIMER is an agent of the Soviet Union."[84]

Borden's charges were so serious that they could not be ignored, but Agent Nichols and his associates at the FBI received the letter with some skepticism. Why had Borden waited so long after leaving the Joint Committee to make his charges? Did he really have some evidence against Oppenheimer, or was he merely trying to put his worst fears on the record? Borden had not backed up his letter with any solid evidence of Oppenheimer's alleged treason but merely summarized in single sentences some twenty instances purporting to show Oppenheimer's ties with communists. The FBI staff noted that Borden's allegations followed the FBI summary of Oppenheimer's file, "except Borden has included his own interpretations and conclusions, which are not factual in every instance." Because Borden's reliability was in doubt, the FBI staff proposed to Hoover that he send a special agent to Pittsburgh to interview Borden to determine whether he had any concrete evidence. In the meantime the FBI wanted to keep Bor-

den's letter from leaking to Oppenheimer or the press, but the FBI felt compelled to warn all departments and agencies that had granted Oppenheimer access to classified information. Painstaking review of the draft within the FBI delayed dispatch of the letter until November 27.[85]

BORDEN AND MCCARTHY

Concurrent events explained the extreme sensitivity that the FBI exercised in handling the Borden letter. On November 6, the day before Borden mailed his letter, Herbert M. Brownell, Jr., Eisenhower's Attorney General, accused former President Truman of nominating Harry Dexter White to be director of the International Monetary Fund despite the fact that he knew White had been a communist spy. Thereafter Truman went on nationwide radio and television to defend himself, accusing Brownell and the Eisenhower Administration in turn of "McCarthyism."

As the issue of McCarthyism boiled up in the nation's press, Murray became increasingly concerned about Strauss's growing tendency to immerse himself in security matters. As he told J. Edgar Hoover on November 23, he was shocked that Strauss had employed as his special assistant David S. Teeple, a former aide to Senator Hickenlooper and former security investigator for the Manhattan Project, a man known around Washington for his excessive zeal in security matters. Teeple, at Strauss's behest, was reportedly digging around in old files and launching "many investigations into things that had happened in the past." Murray asked Hoover whether the FBI had given Strauss any information that had caused him to employ Teeple and step up security activities. At first Hoover could think of nothing out of the ordinary, but then he recalled somewhat nonchalantly the Oppenheimer case. He mentioned to Murray his efforts during spring 1953 to head off Senator McCarthy and his special investigator, Roy Cohn; Hoover was convinced that McCarthy had been successfully contained. Almost as an afterthought, Hoover mentioned the Borden letter. Hoover could not explain why Borden had written the letter, but he supposed that Borden "had a lot of these things on his mind and decided more or less to dump them into the lap of the FBI." Giving Murray no indication he was particularly alarmed by the Borden letter, Hoover promised to send Murray copies of all important FBI communications with the Commission, including special reports to the chairman and a copy of the Borden letter.[86]

Hoover was correct in asserting that he had steered McCarthy away from the Oppenheimer case. On the day after Murray's visit to the FBI, McCarthy demanded and received equal time over radio and television to respond to Truman. According to C. D. Jackson, McCarthy's sensational speech, aside from announcing an open season on lambasting Truman, openly "declared war on Eisenhower."[87] While the Borden letter was still

in FBI channels, Eisenhower and his staff at the White House discussed the President's response to McCarthy. C. D. Jackson and others in the Administration argued that appeasing McCarthy would wreck the Republican party and lead it to defeat in 1954 and 1956. Eisenhower, however, was adamant; on December 2 he declared he would not "get in the gutter" with McCarthy.[88]

On that same day Hoover began to receive responses to his memorandum forwarding the Borden letter and the Oppenheimer summary to the White House and the heads of seven departments and agencies. The first to call was Secretary of Defense Wilson, who was "shocked" by the news. He recalled the Wheeler incident and wondered whether Oppenheimer might have been involved with Wheeler in the loss of the top secret document. Wilson had already talked to Brownell and Strauss, who had said he did not know whether Oppenheimer was a communist but he knew that the scientist was a "liar." Wilson wanted to be certain that Oppenheimer was cut off from any access to classified defense information. Hoover suggested that Wilson consult General Cutler at the White House and Strauss before taking any formal action. Hoover also reminded Wilson that the FBI had not yet interviewed Borden about his letter.[89]

Apparently dissatisfied with Hoover's cautious approach, Wilson called Eisenhower directly. Because Cutler had not yet brought the matter to the President's attention, Eisenhower did not at first know what Wilson was talking about. But as the Secretary proceeded to describe the FBI summary of the Oppenheimer case and the charges in the Borden letter, which both he and Strauss had received, the President became greatly concerned. "Jolted" by the news about Oppenheimer, Eisenhower bravely professed not to be worried about the McCarthy threat, but his subsequent action that day showed that he did not take the matter lightly.[90] The President sent immediately for Strauss, who found Cutler and others gathered in the Oval Office when he arrived at the White House. The President was determined to act quickly, but he wanted to check first with Attorney General Brownell to make certain that the evidence against Oppenheimer was solid. The next morning, before the meeting of the National Security Council, Eisenhower met with Wilson, Strauss, Under Secretary of Defense Kyes, and Cutler to decide what should be done. Still deeply troubled, the President directed that, pending further investigation, "a blank wall" should be placed between Oppenheimer and any sensitive or classified information.[91]

Just how that "blank wall" was to be constructed the President allowed Strauss and others to decide. The most obvious measure was to revoke Oppenheimer's clearance for atomic energy information, a step Strauss immediately explored. Hoover saw two dangers in this approach. First, he worried that Oppenheimer, then traveling in Europe, might defect to the Soviet Union if he learned of the action against him before he re-

turned to the United States. Second, Hoover warned that lifting Oppenheimer's clearance would give him the opportunity to request a public hearing. Unless the evidence against Oppenheimer was convincing, Hoover feared that he might use clever lawyers to vindicate himself and "then a martyr would have been made of an individual who we know morally is a security risk." Much of the evidence against Oppenheimer, Hoover contended, could not be introduced in a public hearing without revealing confidential sources. Furthermore, Hoover was not at all confident of Borden's reliability. He had dispatched an FBI agent to Pittsburgh to interview Borden that evening; unless Borden had some solid evidence against Oppenheimer, Hoover was not sure that the government would have a good case.[92]

Hoover much preferred the alternative of disbanding the one government committee of which Oppenheimer was still a member (in the Office of Defense Mobilization) so that his clearance would automatically lapse. Abolishing that committee, however, was found impractical, and Strauss noted that merely allowing the clearance to lapse would not be sufficient to cut Oppenheimer's many lines of communication with scientists in the atomic energy establishment. In fact, Strauss on the afternoon of December 3 considered notifying the directors of all the Commission's laboratories that Oppenheimer's clearance had been suspended. But both LaPlante and Hoover warned Strauss that such a directive would likely leak to Oppenheimer, who might then decide to defect. Thus, Strauss decided to revoke the clearance but to issue no instructions to the field and to delay informing Oppenheimer until he returned to the United States on December 13. Running through all these discussions on December 3 was the pressure to act quickly. As Cutler told Strauss, "he wanted a record established of very prompt action."[93] Such a record would presumably protect the President in any subsequent investigation by McCarthy, and the best way to take prompt action was to suspend Oppenheimer's clearance.

As Nichols astutely observed, there was an important coincidence between the Harry Dexter White–McCarthy incident and the Oppenheimer case.[94] Indeed, McCarthy had forced the President's hand in dealing with Oppenheimer, but not for the reasons generally assumed. Eisenhower had little reason to fear that McCarthy would exploit the Oppenheimer case, but, in the atmosphere created by Brownell's charges against Truman and then McCarthy's accusations against the Administration, Eisenhower knew that he faced a crisis of confidence with his immediate staff. McCarthy had presented the inexperienced President a delicate political problem to which he instinctively responded with caution approaching timidity. The Oppenheimer case, however, lay in the familiar area of national security where, cloaked in secrecy, the former general could react with the same kind of dramatic swiftness that he had demonstrated in the Wheeler affair. In short, with Dulles, Jackson, and others worried about presidential leadership, it

was almost inevitable that Eisenhower would respond boldly to Borden's challenge.

Strauss may have been correct when he said that the President wanted to get rid of Oppenheimer. But as Eisenhower wrote in *Mandate for Change*, the charges against Oppenheimer "were brought not by an unknown citizen," but by Borden, who had directed the Joint Committee staff "under the preceding Democratic administration, and who obviously was aware of the gravity of his charges." Under the circumstances, which included the fact that the President was due to leave for an international conference in Bermuda, Eisenhower had few alternatives. There was no time for a calm and leisurely deliberation. Finally, because Eisenhower had no direct knowledge of the Oppenheimer file except through Hoover's report and no authority to revoke the physicist's clearance by presidential order, he could only suspend Oppenheimer's access to classified information pending a hearing by the Atomic Energy Commission. Thus, almost before anyone knew it, events had advanced to the point where few viable options were left.[95]

ATOMS FOR PEACE

On the morning of December 3, 1953, before the meeting of the National Security Council that decided Oppenheimer's fate, the President reviewed C. D. Jackson's sixth draft of the United Nations speech with Strauss, Wilson, Dulles, and Kyes. Jackson later wrote that Wilson was "still mumbling around in his cave," but Kyes had reversed himself after his bitter attack on November 30. The session resulted in a few more changes that Jackson managed to complete later that day.[96]

Eisenhower probably would have addressed the General Assembly in November had it not been for the Bermuda conference with Prime Minister Winston Churchill and Premier Joseph Laniel of France. Because the British and French leaders had not been told of the plan, the President decided not to seek an invitation from the United Nations until he had arrived in Bermuda. Strauss explained his proposal for a nuclear pool to Lord Cherwell, Churchill's scientific adviser. Although Cherwell predicted that the pool would be difficult to establish, he agreed to support the plan. Churchill, who had already read the speech, then approved it with only a few suggestions for minor changes, which Eisenhower accepted.[97]

Arrangements had been made for the presidential party to fly directly from Bermuda to New York, where Eisenhower was to address the General Assembly on December 8. As soon as the President boarded the plane, he called Dulles, Strauss, Jackson, and James Hagerty, his press secretary, to his cabin and began to edit the speech line by line. As each

page was completed, it was retyped on stencils and reproduced on a mimeograph machine in the rear luggage compartment. As the plane approached La Guardia Field, Dulles, Strauss, and others helped to staple copies that would be distributed at the United Nations.[98]

As Eisenhower mounted the rostrum at the General Assembly that December afternoon, he was realizing a hope he had been pursuing since the first weeks of his Administration—to arrest and, if possible, reduce the growing danger of a world holocaust made possible by the development of fission and thermonuclear weapons. The United States proposed that the nuclear nations "begin now and continue to make joint contributions from their stockpiles of normal uranium and fissionable materials to an International Atomic Energy Agency" to be established under the aegis of the United Nations.[99]

In nine weeks the President had moved far beyond Strauss's pro-
72 posal for an international pool of fissionable material. Instead of isolating the material in underground tanks, Eisenhower was now proposing to use it to develop power for peaceful purposes. "Who can doubt," the President asked, "if the entire body of the world's scientists and engineers had adequate amounts of fissionable material . . . , that this capability would rapidly be transformed into universal, efficient, and economic usage." Nuclear power itself was to save the world from nuclear devastation.

Balancing the nuclear threat with nuclear power was an idea that Eisenhower seemed to have vaguely in mind in his very first comments to Snapp in Augusta more than a year before. The idea's simplicity and directness were appealing. It electrified the United Nations General Assembly and the world as few political statements had done since Bernard Baruch's address in June 1946.[100] But in the very simplicity of the idea lay its limitations. Could atomic energy, which had heightened world tensions and distrust, now become a unifying force for peace? And was nuclear power as imminent as the President seemed to think? These were questions the Atomic Energy Commission would have to answer.

CHAPTER 4

THE OPPENHEIMER CASE

When Lewis Strauss returned to Washington on December 8, 1953, following the President's speech at the United Nations, he plunged back into the Oppenheimer case. Because Oppenheimer's only significant access to classified information was through his consultant contract with the Commission, Strauss knew that he and his fellow Commissioners would have to undertake on behalf of the government whatever formal action was brought against Oppenheimer. The extreme sensitivity of atomic energy information had prompted the Commission to develop detailed procedures for handling personnel security cases. Since 1947 these procedures had been tested in numerous cases and had come to be regarded by many security experts as a model that other government agencies might well follow.[1] In two respects, however, the Commission's security procedures were not well designed for the impending Oppenheimer case: they had been used almost exclusively at the Commission's field offices rather than at headquarters, and they had never been applied to a person of Oppenheimer's prestige and influence.

TROUBLE AT HOME

Strauss's first priority was to set things right with his fellow Commissioners, who knew only that the President had ordered Oppenheimer's clearance suspended. During the hectic hours on December 3, when Strauss was trying both to respond to the President's order and to prepare for the Bermuda conference, there had been no opportunity for a Commission meeting. Although Smyth had technically served as acting chairman during Strauss's absence in Bermuda, he had been bedridden with a sinus infection and sore throat during that week and had the benefit of only one brief

and guarded telephone conversation with Strauss before the chairman's departure. To bring the Commission up-to-date, Strauss scheduled an executive session for December 10.[2]

Murray was the only Commissioner who had already responded to the events of the previous week. While Strauss was in Bermuda, Murray completed a memorandum that set forth his views on the Oppenheimer case. Reminding Strauss that he had known of Oppenheimer's record since joining the Commission, Murray wanted to make clear that he had not been ignorant of or complacent about the matter. But it had been his understanding that Oppenheimer's record "was not sufficiently derogatory to call for stopping his access to restricted data."[3] Nevertheless, after reviewing Oppenheimer's "strong negative position" on the hydrogen bomb, Murray believed that the physicist's usefulness had been severely reduced. Murray had been especially determined to eliminate Oppenheimer's unhealthy "ex-
74 cessive influence" over the general advisory committee and had argued in 1951 against the reappointment of Enrico Fermi to the committee in order to establish a strong precedent against Oppenheimer's reappointment a year later. In fact, since he also believed that the paramount interest of the country outweighed "any possible question of equity to an individual," Murray agreed that Oppenheimer's access to classified information should be terminated if there were "any shadow of doubt on the security of vital information accessible to Oppenheimer," and "from a reading of the FBI report, I would like to record that I don't reach the conclusion that Borden does."[4]

Thus, Murray served Strauss notice that he, although in sympathy with the move to dump Oppenheimer, would not support the use of the security system to achieve that end. Unfortunately Murray's voice was somewhat muted because circumstances prevented him from developing his statement fully. In a memorandum ultimately sent to Strauss, Murray confessed that for the past three years he had discussed various security matters with Hoover, who had briefed him on the Oppenheimer case. What Murray could not tell Strauss was Hoover's earlier statement that "there was not sufficient derogatory evidence in the FBI files to call for AEC's ending Oppenheimer's access to restricted data," a considerably stronger reservation than the one ultimately given to Strauss. Rejecting Murray's statement in the draft memorandum, Hoover denied that he had ever expressed such a definite opinion and requested Murray to eliminate specific mention of their conversations about Oppenheimer, particularly those that had taken place during the Weinberg case in November 1952. After negotiating with two of Hoover's agents, Murray agreed to amend his statement by deleting "the fact that Mr. Hoover expressed any opinions about Oppenheimer," but he retained reference to his special knowledge of the Oppenheimer case.[5]

Originally Murray intended to recommend that the Oppenheimer

case be referred to the special committee on atomic energy of the National Security Council, a maneuver that would obviously diminish Strauss's role in any future proceedings against Oppenheimer. Without success Murray sought support for his proposal from Smyth and Zuckert, the other Truman appointees to the Commission. The three men convened prior to the December 10 executive session; Murray read his memo but failed to receive the approval of either colleague. Without promising their support or disagreeing with Murray, they left the whole matter in limbo. At the moment another issue seemed even more important than the Oppenheimer case. They had just learned that Strauss had been working on Eisenhower's Atoms-for-Peace speech without their knowledge. This information not only damaged their pride but also suggested that Strauss was usurping their functions as Commissioners. Thus the "Bermuda crisis," as they called it, loomed as large as the Oppenheimer case itself. Just before the three Commissioners entered the executive meeting, Smyth and Zuckert both spoke openly of resigning.[6]

From the outset the Oppenheimer case threatened to become a partisan issue. Joseph Campbell, Eisenhower's other Republican appointee, was the only Commissioner with whom Strauss really confided on December 3. Campbell met Strauss at the airport on December 8 and accompanied by two aides drove to Strauss's apartment at the Shoreham to brief the chairman. Strauss told Campbell that he had an appointment the morning of December 9 to discuss the Oppenheimer case with the President, Brownell, and Authur S. Flemming, director of the Office of Defense Mobilization. Strauss met again with Brownell and Flemming at the Department of Justice the following day after the conclusion of the National Security Council meeting.[7]

Strauss opened the executive session on December 10 by reviewing the events of December 3 but omitting his meeting with the President. On receiving the President's directive, Strauss explained, he had immediately called a meeting of the Commission, which had been attended only by Campbell. The chairman did not tell them that he had met with Flemming and Brownell, but he did note that he intended to consult with Brownell. There were no objections. Then Strauss took cognizance of Murray's independent contacts with Hoover by announcing that he intended to ask Hoover to keep all the Commissioners advised.[8]

THE STATEMENT OF CHARGES

The first step in a personnel security investigation was to prepare a statement of charges. Usually a field office attorney performed this task, but, because of the exceptional nature of the Oppenheimer case, Strauss asked William Mitchell, the Commission's general counsel, to draw up the state-

ment himself. Mitchell, fifty years old, had been educated at Princeton and Harvard and had practiced law in Minnesota and the District of Columbia. His service in the Army Air Force during World War II had led to his appointment in the Truman Administration as special representative of the President to negotiate civil air transport agreements with several Latin American countries and as special assistant to the Secretary of the Air Force on overseas bases. As the son of Herbert Hoover's attorney general, however, Mitchell's credentials as a conservative Republican were impeccable. Mitchell's quiet and judicious manner and his unquestioned integrity made him an effective legal adviser to Strauss.

Although Mitchell had broad experience as a lawyer in both private practice and government, he had never before been directly involved in preparing a security case. After several unsuccessful attempts to draft the statement of charges himself, Mitchell obtained Strauss's permission to give

the assignment to Harold P. Green, a young lawyer who had worked in the general counsel's office for three years. Green had never read the Oppenheimer file, but he had learned something of Oppenheimer's "checkered past" as an official observer at the Weinberg trial. On Friday afternoon, December 11, Mitchell gave Green two thick volumes of the Oppenheimer file and a copy of the Borden letter. Mitchell explained the background of the "blank wall" directive and the need for secrecy. He asked Green to prepare a statement of charges against Oppenheimer that weekend.[9]

Green was given few instructions except that he was not to focus on Borden's allegations concerning Oppenheimer's opposition to the hydrogen bomb. Green knew from the outset that he was involved in a matter of historic proportions, but he did not suspect that the Oppenheimer case would be handled any differently from routine personnel security reviews conducted by the Commission. Arriving at the Commission at 6:00 a.m. on Saturday, Green began his systematic review of Oppenheimer's file, only to be interrupted twice by Commission General Manager Nichols, who summoned him to his office to talk about the case.[10] Well aware that under Commission regulations Nichols would probably make the final decision about Oppenheimer's fate, Green was disconcerted by Nichols's apparent enthusiasm for the prosecution and the seeming impropriety of taking a position against Oppenheimer's interests.

Green worked steadily throughout the day, reading the FBI files that contained a monotonous rehash of ancient events and stale investigations.[11] The only fresh information of any interest consisted of recent interviews with Teller and Kenneth W. Pitzer, who criticized Oppenheimer for his opposition to the hydrogen bomb; but this material was outside the scope of Mitchell's vaguely defined guidelines. Unable to identify substantial grounds for challenging Oppenheimer's loyalty, Green decided to take a tack common to personnel security cases: to draft charges primarily designed to test Oppenheimer's veracity. Green had no qualms about his

strategy. Confident that an experienced and eminent board would review the charges, he selected thirty-one items from the file, almost all of which would allow the prospective board to match Oppenheimer's memory and truthfulness against known and established facts.

When Green finally finished his draft statement of charges at noon on Sunday, he called Mitchell, who wanted to review the draft before submitting it to Strauss, Nichols, and Hoover for concurrence. Thereafter followed what has been described as the "most crucial two-hour period in the entire Oppenheimer affair."[12] Green, waiting alone at the Commission, mulled over his work, becoming increasingly dissatisfied with ignoring the FBI interviews of Teller and Pitzer. Oppenheimer should not be punished because of his opposition to the hydrogen bomb, Green understood, but could not his alleged disingenuousness on the hydrogen bomb issue serve as a pertinent and more timely basis for testing his veracity? With nothing else to do, Green decided to cast several additional charges based on the material found in the unused FBI interviews. Concentrating on the Teller interview, which he found most useful, Green added seven more charges. Teller himself, as the FBI interview made unmistakably clear, did not doubt Oppenheimer's loyalty and thought it wrong to remove him from any office on the grounds of disloyalty. Nevertheless, Teller hoped that Oppenheimer would be removed from all responsibilities connected with military preparedness because of the mistaken advice he had given in recent years. Using the same words as Borden, Teller accused Oppenheimer of "whitewashing" the record of the general advisory committee in an attempt to show that, once the weapon had become an inevitability, the committee had favored its development all along. Here was sufficient grist for Green's veracity mill. When he was done, Green had extended the charges from thirty-one to thirty-eight, producing by coincidence, perhaps, seven H-bomb charges, the same number that Borden had included in his November 7 letter to Hoover.[13]

Satisfied with his draft at last, Green relinquished the manuscript to Mitchell, who made no changes and offered no objections to the paper, including the hydrogen bomb allegations. The next morning Mitchell sent the draft to Nichols, who forwarded it to Hoover without comment. The FBI carefully checked Green's work for accuracy, making certain that its files confirmed all the charges. Hoover subsequently recommended that two charges be dropped entirely and eleven others be amended either to correct misspellings and incorrect data or to eliminate accusations that could not be substantiated by available witnesses. Hoover mostly confined himself to editorial chores, avoiding substantive comment on the hydrogen bomb charges and the other allegations.[14]

It is tempting to conclude that the hydrogen bomb charges were included in the statement almost as an afterthought and inexplicably were endorsed by the Commission virtually unnoticed and unchallenged. Unfor-

tunately including the H-bomb charges was far less accidental than it seemed on the surface. Mitchell had not told Green that he had given up the assignment after Smyth and Zuckert had criticized his attempts to include the H-bomb charges. In fact, all the Commissioners except Campbell had strong opinions on this question, and Smyth had relented on December 14 only with great reluctance.[15]

THE MEETING WITH OPPENHEIMER

Strauss kept the President fully informed of developments in the case and solicited advice from Eisenhower in turn. Oppenheimer's request for an appointment with Strauss precipitated the issue, and in the President's office they decided that Strauss should see Oppenheimer, tell him about the
78 President's directive, and give Oppenheimer a chance to resign; should he decide to carry his case further, Strauss could hand him the statement of charges and offer him the regular hearing procedure. Thus, when Strauss convened an executive session on the afternoon of December 15, the Commission was presented with another fait accompli: this time presidential concurrence in procedures the Commission itself had not yet approved.[16]

Although Smyth and Murray knew that they could not oppose actions approved by the President, both had deep reservations about the decision. Smyth believed that a formal suspension of clearance would not only be a severe blow to Oppenheimer's reputation but would also tend to prejudice the evidence. There was some chance, in Smyth's opinion, that Oppenheimer's consultant contract could be terminated without raising the clearance question, but Smyth finally decided not to press his objections with his fellow Commissioners because he feared that the case might become a political football in the hands of McCarthy. Murray shared a similar concern after he had met privately with Joint Committee on Atomic Energy security officer Francis Cotter, who told him that he knew all about the Oppenheimer case and Borden's role in it. Cotter urged that the Commission consider using a specially appointed presidential panel to hear the Oppenheimer case, and he intimated that Joint Committee Chairman Cole would support such a move. A few days later Herbert S. Marks, a former general counsel at the Commission, insisted on seeing Strauss to warn him that Senator William Jenner was considering an investigation of Oppenheimer.[17] None of these developments would make it any easier for the Commission to drop the case.

When Oppenheimer kept his appointment with Strauss on December 21, the chairman explained to him that the Commission faced a difficult problem in continuing his clearance. Without naming Borden, the chairman told Oppenheimer how a former government official had called atten-

tion to Oppenheimer's record, an action that resulted in an FBI report to the President, who had directed the Commission to subject Oppenheimer's clearance to a formal hearing pursuant to the President's recent executive order. Strauss explained that the first step would be to suspend Oppenheimer's clearance by giving him a letter from the general manager informing the scientist of his rights and the nature of the derogatory information occasioning the suspension of his clearance.[18] Handing Oppenheimer a draft of the letter, Strauss and Nichols waited tensely while Oppenheimer read the charges. Obviously impressed and shaken by the evidence accumulated against him, Oppenheimer inquired whether a board had ever cleared anyone with a similar record. Strauss conceded that he did not believe a comparable case had ever been heard before and could not venture an opinion on the probable outcome.

Oppenheimer's resignation was an obvious alternative to a formal hearing, and the two men discussed that option at some length.[19] It became evident to Oppenheimer that Strauss believed a simple resignation was the better course to follow, but Strauss stopped short of making an outright recommendation. Sensitive to possible future accusations that he and Nichols had used "star chamber" tactics on Oppenheimer, Strauss was careful not to force Oppenheimer into any prescribed course of action. At first reflection Oppenheimer was inclined to offer his resignation, a move that might have ended the matter then and there; but the more he thought about the specter of the Jenner committee investigation, the more he became troubled by the prospect of resigning his consultantship prior to the putative investigation by the Congressional committee. To quit without a fuss, as Strauss plainly wanted him to do, would also be interpreted as evidence of guilt whenever the President's order and the Commission's unsigned charges were brought to light, as they surely would be.

When Oppenheimer asked how much time he had to think the matter over, Strauss replied that, because implementing the President's order had already been delayed nearly three weeks, he could only give the scientist until the next day to make up his mind. Nevertheless, Oppenheimer thanked Strauss for his consideration and indicated he would consult with Marks. Desiring to study the statement of charges carefully with his lawyer before coming to a decision, Oppenheimer asked if he could take a copy of Nichols's letter with him. Strauss refused the request on the grounds that it would be unwise to circulate the unsigned letter, but he promised to dispatch the statement of charges immediately should Oppenheimer choose to go through the normal hearing procedure rather than request termination of his contract.

Oppenheimer apparently had had no intimation of the government's proposed action before he walked into Strauss's office, and the shock of his experience was evident as he rose to leave. He regretted, the scien-

tist remarked to Strauss, that he had to sever his relationship with the government under either alternative, but he understood that given the circumstances the Commission had little recourse but to offer him the two painful choices. As Oppenheimer prepared to leave, Strauss told him about Marks's visit earlier that morning. When Oppenheimer indicated he would like to consult Marks immediately, Strauss lent the scientist his car so that he could drive directly to Marks's office. It was 3:35 p.m.; the entire meeting had lasted only slightly more than thirty minutes.[20]

That evening Oppenheimer met briefly with Marks and another friend, former General Counsel Joseph A. Volpe, Jr., before returning to Princeton by train. Shortly after noon the next day Nichols called Oppenheimer in Princeton to ask whether he had reached a decision. Oppenheimer had not had time to recover from the blow of the previous day's meeting, much less give very much thought to the decision, but Nichols insisted upon an answer that afternoon. Under this pressure Oppenheimer decided to return at once to Washington, and he spent the evening in Volpe's office discussing the strategy of a reply. Volpe, experienced in the ways of the bureaucracy, urged Oppenheimer to seek an accommodation with the Commission: Oppenheimer would quit if the Commission accepted his resignation without prejudice, that is, on the basis that his services were no longer needed without mentioning the security aspect. But cold reflection reminded them that neither the Borden letter nor the Commission's statement of charges would disappear. From Oppenheimer's point of view, it was one thing to resign under pressure when one's services were no longer wanted or needed but quite another to be forced out by the security system, sacrificing both integrity and honor while leaving the charges unchallenged. He decided to accept the Commission's statement of charges with all the risks and uncertainties it entailed.[21]

Even before Oppenheimer accepted the statement of charges, Strauss inquired whether the FBI could set up a "full-time surveillance" of Oppenheimer, which would have required agents to monitor Oppenheimer's every movement and contact around the clock. Hoover objected that such an operation would be too costly in manpower and money, but he did order the FBI office in Newark, New Jersey, to maintain a "spot check" on Oppenheimer. This meant assigning two agents to follow Oppenheimer and members of his family when they left his residence and to observe visitors. Hoover also authorized taps on Oppenheimer's home and office telephones; these were installed on January 1, 1954. The Newark office reported that the taps made the spot check quite efficient and permitted the FBI to plan surveillance operations when Oppenheimer indicated that he planned travel outside the Princeton area. Thus, after January 1 the only privacy accorded Oppenheimer by the FBI were conversations within his own home.[22]

A STRATEGY FOR DEFENSE

Buoyed up and encouraged by his friends, Oppenheimer set about after the New Year to obtain competent legal assistance in his confrontation with the Commission. Far from complacent about his situation, Oppenheimer would have been even more concerned had he known that Strauss, Nichols, and Mitchell were privy to his every move in selecting counsel. When the FBI agent in Newark first began to pick up conversations about legal matters, he called his supervisors in Washington to ask whether the tap should be continued "in view of the fact that it might disclose attorney-client relations." He was assured that the tap was appropriate because Oppenheimer was involved in a security case, not a criminal action; moreover, the FBI's chief concern, the agent was informed, was to learn immediately of any indication that Oppenheimer was planning to flee the country. Under the circumstances the surveillance was "warranted." Strauss in turn reassured Bates that the surveillance was "most helpful" to the Commission in that "they were aware beforehand of the moves he [Oppenheimer] was contemplating." Strauss confided to both Bates and Mitchell that the importance of the case "could not be stressed too much." If the Commission lost the case against Oppenheimer, Strauss thought that the atomic energy program would fall into the hands of "left-wingers" and the scientists would take over the whole program. Strauss warned that if Oppenheimer were cleared, then "anyone" could be cleared regardless of the information against them.[23]

The FBI office in Newark provided Strauss and Mitchell with almost daily reports on Oppenheimer's efforts to find counsel. Volpe advised Oppenheimer to find a tough trial lawyer experienced in the rough and tumble of courtroom cross-examination; but selection of appropriate, able, and available counsel on short notice was a difficult task. It took Oppenheimer almost two weeks, with Marks's help, to assemble his legal staff. His chief counsel would be Lloyd K. Garrison, a New York attorney whom Oppenheimer knew as a member of the board of trustees of the Institute for Advanced Study. Garrison offered Oppenheimer legal distinction well-matched to the physicist's scientific reputation. Like Oppenheimer, Garrison was also drawn to liberal causes and had served as president of the National Urban League and as a member of the American Civil Liberties Union. Described as "Lincolnesque in appearance" and "mild of manner," Garrison seemed an excellent complement to Oppenheimer, both temperamentally and intellectually. Assisting Garrison were Marks and Samuel J. Silverman, an attorney in Garrison's law firm.[24]

Shortly after accepting the assignment as Oppenheimer's chief counsel, Garrison realized that he would need a security clearance. Not only would Oppenheimer's FBI files and materials relating to the hydrogen bomb

be denied him without a clearance, but Garrison feared he could not even talk freely with his client without compromising classified information. Garrison's application for clearance for himself, Marks, and Silverman gave Nichols some concern. Although the FBI had no substantially derogatory information on Silverman or Garrison, there had been several allegations going back many years against Marks. Much material in Marks's file was hearsay, vicious, and unverified, but it seemed serious enough to preclude a quick reinstatement of Marks's clearance without a full background investigation. There was a real danger that the Commission might become involved in a personnel security hearing for Marks as well as Oppenheimer.[25]

Trying to be as diplomatic as possible, Nichols suggested limiting clearance to Garrison alone on the grounds that one clearance would be sufficient for handling Oppenheimer's case. After considering the question
82 for several days, Garrison decided that he would not request a clearance for either himself or his associates but would present the case as best he could on the basis of unclassified evidence. Nichols had no choice but to accept Garrison's decision, but he told Garrison he had made a serious mistake. Nichols assured Garrison that he would try to declassify all documents relevant to the case, but Garrison's decision left him standing with Oppenheimer outside Eisenhower's "blank wall" of security.[26]

During the third week of January 1954, Garrison and others explored with Nichols and Strauss a variety of procedures that might have avoided a formal hearing. In every case Strauss was careful not to appear to be forcing Oppenheimer's hand, but with good reason he could not promise that the proposed alternatives would save Oppenheimer from later embarrassment.[27] In fact, when Garrison and his colleagues had thought better of their own suggestions, Strauss offered Garrison an idea of his own. It was always possible for Oppenheimer, as it would be for any respondent, to terminate his contract, thus removing the "need to know" and making further proceedings unnecessary. In this connection, if the Commission had Oppenheimer's letter of resignation in hand, Strauss would try to reinstate the scientist's clearance temporarily before the resignation was accepted and, against his better judgment, withdraw the letter of charges before accepting the resignation. Again Strauss could offer no absolute guarantees, especially against Congressional hearings or publicity attendant to the case, but his solution would have allowed Oppenheimer to save some face, avoid a hearing, and minimize the impact of his troubles on the Commission's program.

Given the pendency of the hearings, Garrison doubted whether it would be possible for Oppenheimer to tender his resignation without appearing to concede the substance of the charges, even if they were withdrawn. Marks suggested that Oppenheimer's clearance could be reinstated

and the proceedings dropped, allowing the physicist's contract to expire on June 30, 1954; but in view of the President's orders it was not possible for the Commission to do this. As they parted, the lawyers indicated they would discuss the matter with Oppenheimer while Strauss reported the negotiations to the full Commission. At the end of the day, Garrison and Marks returned to report bad news; they had spent the afternoon discussing alternatives with Oppenheimer, and the scientist had decided it was necessary to go through with the hearing.[28] The negotiations having failed, both sides had no choice but to continue their preparations for a hearing.

THE SECURITY BOARD

Because the Washington headquarters did not have a regularly constituted personnel security board as did the Commission's operations offices, it was necessary either to bring in a board from the field or to appoint an ad hoc board for the sole purpose of judging the evidence against Oppenheimer. It was also apparent to Commission officials that should Oppenheimer demand a hearing, no ordinary panel would be competent to review the case. Thus, after conducting an exhaustive field survey, General Counsel Mitchell recommended the ad hoc board. Mitchell suggested the Commission recruit a board of tough but honest men who were Oppenheimer's peers; if possible the board should be composed of a lawyer, a university scientist, and an individual with a national reputation in private life. It was also desirable, Mitchell noted, to have at least one Republican and one Democrat on the board.[29]

Gordon Gray was the Commission's choice to head the board. From a wealthy and prominent North Carolina family, Gray brought to the board a stature that easily matched Oppenheimer's. A graduate of Yale Law School, Gray had practiced law in New York, had become a publisher in North Carolina, and had been active in state politics. After serving in the Army during World War II, he became Assistant Secretary of the Army in 1947 and had served as a presidential assistant until he was elected president of the University of North Carolina in 1950. Gray was the only member of the board to be recruited personally by Strauss.

The staff recommended the second member, Ward V. Evans, a professor of chemistry at Loyola University in Chicago. Evans had earned a reputation as a conscientious member of security review boards appointed by the Chicago operations office. He scarcely matched Oppenheimer in scientific reputation, but he was a respected teacher. To balance Evans, a conservative Republican, the Commission hoped to find another Democrat so that the board would not seem stacked against Oppenheimer. After at least four candidates refused the position, Mitchell secured the consent of

industrialist Thomas A. Morgan of New York. The son of a North Carolina farmer, Morgan had worked his way up through the trades to become a naval technician during World War I. His ability to repair gyrocompasses earned him a position with the Sperry Gyroscope Company after the war, and he became president of the company in 1933 at the age of forty-six. In 1949 he had served in the Truman Administration as an adviser on management improvement.[30]

Although neither Oppenheimer nor Garrison expressed any dissatisfaction with the Commission's choices for the board, the selection of Roger Robb as counsel for the board proved one of the Commission's most controversial decisions. First, the selection of an attorney from outside the general counsel's staff to assist the board in a personnel security matter was unprecedented, representing another clear departure from the Commission's normal procedures. But that fact alone would not have raised questions were it not for Robb's perception of his task. In contrast to Garrison, whose experiences in labor arbitration had taught him the arts of compromise and conciliation, Robb had earned distinction as a prosecutor during his seven years as Assistant United States Attorney in Washington between 1931 and 1938. Thereafter in private practice he developed a local reputation for being a combative and resourceful trial lawyer.

Like Gray, Robb was first approached personally by Strauss. When the Commission decided to seek outside assistance in the Oppenheimer case, Strauss obtained Robb's name from Deputy Attorney General William P. Rogers. Robb's selection as the personnel security board's counsel was later interpreted as evidence of Strauss's determination to "get Oppenheimer." Strauss, Stewart and Joseph Alsop charged, "had the final responsibility for the curious decision that the AEC counsel should be Roger Robb, a man best known as the lawyer for Senator Joseph R. McCarthy's chief journalistic incense-swinger, Fulton Lewis, Jr."[31] Although there was no evidence that Robb was Strauss's or the Administration's hand-picked hatchet man, the fact that Robb was employed for his trial skills was evident even to Robb himself. Thus, Robb's subsequent handling of the Oppenheimer case before the Gray board helped create the suspicion that he had been specifically chosen to carry out Strauss's alleged vendetta against the scientist.[32]

PREPARING FOR THE HEARINGS

Garrison's decision to present the defense on an unclassified basis by foregoing a security clearance for himself meant that he could inspect no classified material in Oppenheimer's file. Garrison and Marks requested the Commission to declassify certain documents entirely. These included 1946

FBI reports containing derogatory information about Oppenheimer, letters from leaders of the Manhattan Project, and specific Commission records on Oppenheimer's 1947 clearance and his views on the hydrogen bomb. Nichols informed Garrison that Oppenheimer could read any classified document Oppenheimer himself had signed. If Oppenheimer came to Washington for that purpose, Nichols promised to make the documents available to him in the general manager's office. Although there were no verbatim minutes of the Commission's action in 1947, Mitchell was willing to stipulate for purposes of the Gray board hearings that "on August 6, 1947, the Commission recorded clearance of Dr. J. Robert Oppenheimer, which it noted had been authorized in February 1947."[33] But Nichols reported that the Commission was unable to go beyond that.

Garrison's disadvantage was obvious but far greater than even he suspected. The FBI had not only provided the Commission with investigative reports relative to the Borden letter and Nichols's statement of charges, but between December 22, 1953, and April 12, 1954, the first day of the Gray board hearings, the FBI sent the Commission more than 110 reports concerning Oppenheimer, of which more than 50 were transmitted as personal letters from Hoover to Strauss.[34] Hoover was careful not to reveal the source of his information, but it was evident even from his letters that the FBI had either bugged or wiretapped Oppenheimer's home and office or had successfully secured an informant among Oppenheimer's inner circle of friends and associates. As a consequence, the Commission knew of the defense lawyers' plans and strategy, their discussions with potential witnesses for Oppenheimer, and their conferences with their client, as well as Oppenheimer's other business, both personal and mundane.[35]

It is difficult to assess the influence of Hoover's communiqués on the outcome of the Oppenheimer case, and it is not known when Hoover's letters to Strauss were added to Oppenheimer's official file. If they were placed in the file before the hearing, or were added during the hearing, the Gray board would have had access to them. If not, possibly the Gray board did not know of their existence. Robb probably knew about them and Nichols certainly did, as perhaps did Murray, who boasted that he received everything from Hoover that Strauss did.

If the Hoover letters accomplished nothing else, they allowed the Commission to follow the progress of Oppenheimer's preparations. During February Hoover reported in detail Oppenheimer's telephone conversations with his brother; the activities of Garrison and Marks; a private discussion with Robert Cutler, administrative assistant to the President; and conversations of Oppenheimer's wife's at social events. Even more important for Robb were Hoover's reports on Oppenheimer's strategy and the reasons behind his selection of defense witnesses.[36]

On February 4, 1954, Robb settled down to study the Oppenheimer

file and plan his presentation to the personnel security board. Strauss and Mitchell had explained that the hearing would not be a trial, but Robb realized that the proceedings would have many elements of a trial and prepared his case accordingly. Working steadily between eight and ten hours a day, Robb plowed through Oppenheimer's thick Manhattan District file, which at the time was in the possession of the FBI. Although he had known virtually nothing about Oppenheimer when he accepted the assignment, Robb quickly assumed command of the case.

To begin with, Robb discovered that he worked most easily with C. Arthur Rolander, Jr., his chief assistant from the division of security, Charles Bates of the FBI, and Bryan LaPlante and David Teeple, special assistants to Chairman Strauss. Teeple was especially helpful in providing Robb concise personality profiles of all the major characters involved on both sides. Bates not only provided liaison with the FBI but also suggested
86 new aspects of the case. For the most part, however, because the matter was held in such strict secrecy, Robb and Rolander worked on the case alone.[37]

Robb's task was made difficult by the magnitude of Oppenheimer's file, but he had help from other sources. Corbin Allardice, Borden's successor as executive director of the Joint Committee, offered Robb and Rolander important assistance by providing copies of relevant documents that the FBI had culled from the committee's files. Allardice also suggested that Robb interview Borden and Teller and gave Robb a transcript of an interview in May 1950 with Teller, who deplored Oppenheimer's impact on the hydrogen bomb project. The FBI provided Robb and Rolander with the greatest volume of information on Oppenheimer, going back to the contents of the trash from Oppenheimer's residence at Los Alamos during World War II. Because many of these sources could not be compromised—by agreement with the FBI—much of the file was withheld from Oppenheimer and his attorneys, but not from Robb, Rolander, the Gray board, Nichols, and the Commissioners, who were to decide Oppenheimer's fate.[38]

By prior agreement with the FBI, Robb and Rolander agreed not to interview persons outside the Commission who had already been interviewed by the FBI; they would rely upon Bates to furnish transcripts from the FBI files. Robb insisted, however, on the right to interview employees and consultants, including scientists such as Teller, Ernest O. Lawrence, and Luis W. Alvarez, even if they had recently talked to the FBI. The only exception to this rule was Borden, neither an employee nor a Commission consultant when interviewed by Robb and Rolander on February 20, 1954. Borden expressed his opinion that "in terms of his capacity to compromise information" no other scientist was potentially more dangerous than Oppenheimer. After three and one-half hours of telling Robb and Rolander all he knew about the subject, Borden offered the investigators a list of

twenty-eight individuals able to furnish additional information concerning Oppenheimer's influence on the atomic energy program.[39]

John Lansdale, Jr., and Boris T. Pash, both Army security officers during World War II, and General Groves freely discussed Oppenheimer's wartime security status, offering the same opinions in private or in sworn testimony before the Gray board. Unfortunately, some academic scientists, such as Wendell M. Latimer, a professor of chemistry at the University of California, were not that consistent. Accustomed to speaking openly and freely about associates in offices, laboratories, and closed faculty meetings but circumspect and correct when discussing professional colleagues in public, Oppenheimer's academic critics, with the exception of Teller, compiled a poor record of candor during the Gray board proceedings. Teller was fearful that the proceedings might develop into a fight that could adversely affect the nuclear program. Nevertheless, he insisted that any information supplied by him to the Commission or the FBI and used in the hearing be identified with his name, not as furnished by an unidentified informant.[40] Others were not so insistent.

Although Ernest Lawrence did not appear before the Gray board to testify in person, his interview with Robb and Rolander was placed in the record beyond the reach of Garrison's cross-examination. After relating the oft-told story of his own efforts to accelerate the development of the hydrogen bomb in fall 1949, Lawrence concluded that Oppenheimer was largely responsible for the growing resistance to the project. Even worse in Lawrence's opinion were Oppenheimer's attempts to wreck research projects on new weapons. He concluded that Oppenheimer had become so arrogant and had been guilty of so much bad judgment that "he should never again have anything to do with the forming of policy."[41]

MCCARTHY AND THE PRESS

Late in January 1954 James Reston of the *New York Times* received information "from a reliable source" that the Commission had started proceedings against Oppenheimer. Unable to obtain any confirmation from either Oppenheimer or Strauss, Reston attempted to persuade both sides to release the story by playing on their mutual fears that Senator McCarthy might seize the Oppenheimer issue. Reston was in a strong position because both sides would have preferred to release the story through the relatively responsible *New York Times* rather than gamble on the unpredictable effects of a McCarthy disclosure. Reston told Oppenheimer that the *Times* would print the story eventually, but he promised to withhold publication as long as possible.

The Reston threat was bound to exacerbate suspicions on both sides

that the other party was attempting to play politics with the case through the newspapers. The initial reaction in both camps, however, was to join forces to keep Reston quiet. To prepare for the inevitable, the Commission prepared a press release on January 29, 1954, and authorized Mitchell to alert Garrison to Reston's intentions. Garrison acknowledged that Reston had approached Oppenheimer. Whether or not Garrison reciprocated Mitchell's reading of the Commission's proposed press release over the telephone, the Commission soon had a copy of Oppenheimer's proposed statement from J. Edgar Hoover.[42] During February Garrison continued to discuss with Strauss and Nichols the Commission's response to press inquires.

As the Army-McCarthy feud moved toward its climax, Garrison became more worried that Oppenheimer might become McCarthy's next target. Garrison knew that McCarthy had already come across Oppenheimer's name in another investigation. Until he received Reston's warning, how-

ever, Garrison considered an investigation by the Jenner committee the greater threat. It seemed likely that the Joint Committee would rise to any challenge to its own prerogatives from Jenner, but Garrison could get no assurances from Strauss that the Commission would back the committee in such a position.[43]

The situation became even more dangerous on March 31 when Strauss, just back from the Pacific weapon tests, announced that the United States had developed a hydrogen bomb that could destroy an entire city. McCarthy, who had obtained time on Edward R. Murrow's television program to reply to the newsman's attack upon his investigating methods, used the occasion to launch an unexpected blast at the Commission's thermonuclear program. McCarthy charged that there had been an eighteen-month delay in the project as a result of foot-dragging by communist sympathizers.[44] The charge suggested to those in the atomic energy establishment that McCarthy had obtained access to Borden's chronology. For Garrison, who knew nothing of Borden's paper, the charge came dangerously close to Oppenheimer. Whether McCarthy had any solid information or was merely lashing out against his enemies, the attack did come just three days before the formal hearings were to begin on April 12. It was not likely that the Oppenheimer case could be kept secret much longer.

From the FBI, Strauss learned that Oppenheimer was now discussing the possibility of a news release with both the Alsop brothers and Reston. The Alsops were indignant to learn of Oppenheimer's difficulties and were determined to write an essay exposing the government's duplicity in "persecuting" Oppenheimer. Perhaps frightened by the Alsops' enthusiasm, Oppenheimer seemed to prefer working with Reston, who suggested that Garrison give him, in strictest confidence, a copy of the statement of charges and Oppenheimer's reply. Reston was to prepare a story and hold it until it could no longer be kept secret. Garrison appreciated Reston's forbearance as well as the value of the story breaking in an accurate article

by a newsman of Reston's stature. But Garrison also knew that subsequent articles in other papers were not likely to tell the full story, and these might damage Oppenheimer's case. Garrison was also reluctant to break his news embargo agreement with the Commission and did not want to offend the members of the Gray board before the hearings began.[45]

At the same time both the White House and the Commission were wary of McCarthy's exploitation of the Oppenheimer case. In a White House meeting on April 9, 1954, Strauss told Sherman Adams and others that he had learned from the publisher of the *Times* that the editorial board had voted not to publish Reston's story until the news broke elsewhere. Strauss had expressed his gratitude and had promised to alert the *Times* if he learned that anyone else was about to use the story. James C. Hagerty, the President's press secretary, feared that the Eisenhower Administration might get caught in crossfire between McCarthy and Oppenheimer as each tried to use the White House to his own advantage. To avoid that danger, Hagerty suggested that Strauss withdraw his commitment to alert the *Times*. Then, Hagerty reasoned, the *Times* would run the Reston story using Garrison's documents. In so doing, the *Times* would undercut McCarthy and make it unnecessary for the White House to leak the story. Hagerty then assisted Strauss in drafting a press release that would be issued "on the spot" when the story finally broke. In reviewing the draft release on April 10, Eisenhower stressed the importance of sticking to the facts in the Oppenheimer case so that the government could assure "orderly procedure." "We've got to handle this so that all our scientists are not made out to be Reds," the President warned, because "that Goddamn McCarthy is just likely to try such a thing."[46]

As a final effort to neutralize McCarthy, Hagerty sought the senator's pledge to keep silent on the Oppenheimer matter for security reasons. When Hagerty learned that Vice-President Nixon had supposedly extracted such a promise from McCarthy, he suggested that Strauss, Everett M. Dirksen, the Senate majority leader, or perhaps even Nixon himself, should remind McCarthy of the need to respect his previous commitments. Later that same day Strauss tried to reassure a still unconvinced Hagerty that McCarthy had been silenced. Everything seemed to be under control for opening the Gray board hearings on Monday morning, April 12.

THE GRAY BOARD CONVENES

During the week of anxiety at the White House and the Commission over the possibility that McCarthy might capitalize on the Oppenheimer case, the personnel security board began its review of the scientist's clearance file. On the morning of April 5, 1954, Gray, Morgan, and Evans gathered in their makeshift headquarters for a briefing on security criteria and pro-

cedures. Thereafter, with Robb and Rolander close at hand to answer questions or provide technical assistance, they worked meticulously through the file. Throughout the week they remained as anonymous as possible, avoiding the public and eating together at lunch and dinner, where they were often joined by Robb. Not surprisingly, they soon enjoyed a close and personal rapport.[47]

At the outset Morgan reported a profoundly disturbing incident that had occurred just before he left New York. On March 30 he had been approached by Trevor Gardner, a special assistant to the Secretary of the Air Force for research and development, who told Morgan he knew all about the forthcoming hearing. Gardner related that many of the nation's leading scientists were deeply concerned about the government's actions, and he warned that great damage could be done to American scientific morale and defense efforts should Oppenheimer's clearance not be reinstated. Gardner also cautioned Morgan that, in addition to Reston and the Alsops, McCarthy had the story and might use it to everyone's detriment. Morgan, who misunderstood neither Gardner's intentions nor his veiled threats, reported the contact to Gray, who passed the information on to Strauss. Strauss, in turn, informed the President and the Secretary of Defense.[48]

The impact of the Gardner incident on the Oppenheimer case was subtle. Mitchell assured Morgan he could dismiss the matter from his mind, secure in the knowledge that the government had matters well in hand. But the incident, which had involved a serious leak of classified information, left a residue of suspicion with Gray and Morgan on the eve of the hearings. At a minimum they were distressed by the improper advances made on Oppenheimer's behalf. More seriously, perhaps, the incident provided firsthand evidence that Oppenheimer and his friends disregarded the ordinary constraints of the security system and intimidated opponents and critics. By the end of the week, Gray was no longer passively analyzing Oppenheimer's file but was contributing derogatory evidence that he had heard about the scientist.[49]

Gray's suspicions of Oppenheimer and his friends significantly increased following the publication of Reston's story on the second day of the hearing. Apparently ignorant of Hagerty's strategy to force publication in the *New York Times*, Gray had accepted Garrison's pledge that he would do everything possible to keep the story out of the press. Unfortunately, Garrison did not tell Gray that he had already given Reston copies of the statement of charges and Oppenheimer's reply. Thus, when the *Times* accompanied its story with full texts of these documents, it was painfully clear to Gray that Garrison had been less than candid with the board. No one at the Commission seriously questioned Oppenheimer's right to release the charges, and even Gray did not regard the publication a breach of security.

Nevertheless, given Garrison's prior assurances of confidentiality, the episode provided the Gray board still another example of how Oppenheimer and his associates placed their personal judgment above the "rules" by which everyone else had agreed to be governed. Inexcusably, no one at the White House or at the Commission had bothered to tell Gray that the "rules" had been changed.[50]

After weeks of preparation the hearings began on Monday morning, April 12. Perhaps to avoid reporters, perhaps because of the shortage of space in the Commission's headquarters building, Gray convened the hearings in a converted office on the second floor of a dilapidated temporary building that the Commission occupied on Constitution Avenue, near the Washington Monument. In accordance with Commission practice, the security hearing was closed, and attendance was strictly limited. The only Commission personnel were the three members of the board, Robb, Rolander, a classification officer, a court reporter, and a transcriber. With Oppenheimer and his wife were Garrison and his legal associates—Silverman, Allen B. Ecker, and sometimes Marks. Before this group appeared a steady stream of forty witnesses, including Oppenheimer. The list of witnesses included prominent government officials who had known Oppenheimer during and after World War II, two former Commission chairmen and three former Commissioners, several members of the general advisory committee, Nobel laureates, some of Oppenheimer's academic colleagues at Berkeley, leaders of the American scientific community, and former Army security officers. Beginning at nine-thirty each morning, the sessions lasted with few exceptions until well after five, usually for five days each week over a period of four weeks.

Gray opened the first session by reading the statement of charges and Oppenheimer's autobiographical reply.[51] In his moving response, Oppenheimer admitted all but three of Nichols's allegations. He was, by his own admission to the board, a fellow traveler, whose brother Frank, sister-in-law Jacquenette, friend Jean Tatlock, and wife Katherine had all been members of the Communist party. Oppenheimer's confession, however, was hardly startling or incriminating. Army and Commission officials had known about the uncontested derogatory information for years and twice, in 1942 and 1947, had passed favorably on Oppenheimer's clearance despite the record. In fact, Gray was deeply troubled that most of the allegations placed Oppenheimer in double jeopardy, contrary to the American system of justice.[52]

Ironically the members of the board were much more concerned about the three allegations Oppenheimer denied: that he had attended a communist meeting in his home in 1941; that he had obstructed progress on the thermonuclear weapon; and that he had lied about contacts with Soviet agents. Thousands of words and many weeks later, the board's delib-

erations would focus on the second and third of these allegations; they were, in fact, to determine Oppenheimer's fate, whatever public reasons the board and the Commission might give.

ALLEGATIONS: THE CROUCH INCIDENT

Of the first controverted allegation, the Commission and the FBI had known for more than a year that the so-called "Crouch incident" could not be substantiated. In May 1950 Paul Crouch and his wife had testified before the California committee on un-American activities that they had attended a Communist party meeting at Oppenheimer's Berkeley residence. Now before the Gray board, Oppenheimer explained what Gordon Dean had long known: Oppenheimer could not have attended such a meeting because he
92 was on vacation with his wife in New Mexico at the time, a fact that was confirmed by their guest, Hans Bethe.[53]

ALLEGATIONS: THE HYDROGEN BOMB

The second controverted charge, which contended that Oppenheimer had obstructed the development of the hydrogen bomb, was at the same time a central issue in the minds of Oppenheimer's critics and one of the most difficult allegations to substantiate. Aside from noting Oppenheimer's well-known reservations about the hydrogen weapon, Nichols cited only two specific incidents of alleged obstruction. The first was that Oppenheimer had sent reports to Los Alamos about the October 1949 meeting of the general advisory committee, which had recommended against accelerating thermonuclear development. The second was that he had discouraged other scientists (unnamed in the charges) from participating in the project. On the first charge, the Gray board easily determined that the reports in question were not circulated by Oppenheimer but rather had been sent to Los Alamos at the request of the Commission's general manager in preparation for a Congressional visit.[54] But even with this minor charge refuted, the larger question remained: Had Oppenheimer's opposition to the thermonuclear program jeopardized the security of the United States?

Evidence presented to the Gray board established that Oppenheimer had opposed the hydrogen bomb in 1949 on moral and technical grounds, but there was little to indicate that he had obstructed the development of the weapon after Truman had authorized it. Major General Roscoe C. Wilson and David T. Griggs, testifying for the Air Force, recalled Secretary Thomas K. Finletter's suspicious reaction to Oppenheimer's preference for tactical atomic bombs over thermonuclear weapons. Furthermore, there was a belief within the Air Force, Griggs reported, that Oppenheimer led a

group of scientists determined to clip the wings of the Strategic Air Command by advocating deployment of tactical weapons in Europe and the establishment of continental air defense in North America.[55]

Although the plot against the Strategic Air Command could not be proven, Air Force officials had found some of their misgivings reinforced in April 1952, when Luis Alvarez shared with Finletter and others his recollections of Oppenheimer's left-wing activities during the prewar period at Berkeley. Alvarez had learned, however, that this information was already in FBI files. As was often true in the Oppenheimer affair, the only "new" information Alvarez could offer concerned Oppenheimer's apparent duplicity on thermonuclear matters.[56]

Despite their suspicions, it was difficult for Oppenheimer's critics, whether in 1952 during the fight for the second weapon laboratory or in 1954 before the Gray board, to demonstrate conclusively that Oppenheimer had actually impeded the thermonuclear project. It proved impossible to link his evident lack of enthusiasm for the hydrogen bomb with their suspicions of his disloyalty. In April 1952, when Alvarez saw Finletter, the FBI was also questioning four other nuclear scientists about Oppenheimer's attitude toward the hydrogen bomb. Of the four, only one, who requested anonymity, openly expressed his doubts about Oppenheimer's loyalty.[57] On the other hand, Hans Bethe, one scientist Oppenheimer supposedly discouraged, denied that his friend had ever tried to influence him not to work on the hydrogen bomb, although he had agreed in principle with Oppenheimer that the weapon should not be developed.[58]

In the final analysis, the significance of the hydrogen bomb charges brought against Oppenheimer must be measured against their ultimate source, Edward Teller. To Robb, Teller conceded that neither did he know what motivated Oppenheimer to oppose the thermonuclear program nor could he prove that Oppenheimer had not acted in good faith. Teller believed, however, that Oppenheimer had given a good deal of "harmful" advice so as deliberately to impede the project. Skirting the assessment of Oppenheimer's loyalty, Teller speculated that Oppenheimer, not wanting to see his achievements surpassed, might have become a victim of his own vanity. Whatever the reason, Teller thought Oppenheimer should never again have influence over the American thermonuclear program, although he hoped Oppenheimer's clearance would not be revoked "for a mere mistake of *judgment*."[59]

When Teller arrived in Washington to testify he was depressed and troubled, as Strauss no doubt noticed during a private visit just before the hearing. To counteract Teller's doubts and to prepare him as an effective "rebuttal" witness, Robb provided Teller with excerpts from the hearings and a digest of materials from Oppenheimer's security file. The tactic worked when Teller, only vaguely aware of Oppenheimer's left-wing background, shared the alarm of those who read Oppenheimer's file for the first

time. Furthermore, in one instance, he identified testimony that was at variance with his recollection of an earlier conversation with Oppenheimer. Teller seemed to think that Oppenheimer was up to his old tricks, and Robb did nothing to disabuse Teller of this assumption.

On the witness stand, Teller offered substantially the same testimony he had earlier given Robb and the FBI. When Robb inquired about Oppenheimer's loyalty, Teller replied unequivocally, "I have always assumed, and I now assume that he is loyal to the United States." But to Robb's question whether he believed Oppenheimer was a security risk, Teller answered:

> In a great number of cases I have seen Dr. Oppenheimer act—I understand that Dr. Oppenheimer acted—in a way which for me was exceedingly hard to understand. I thoroughly disagreed with him in numerous issues and his actions frankly appeared to me confused and complicated. To this extent I feel that I would like to see the vital interests of this country in hands which I understand better, and therefore trust more.
>
> In this very limited sense I would like to express a feeling that I would feel personally more secure if public matters would rest in other hands.[60]

Afterwards Teller realized he had virtually condemned Oppenheimer for his opinions and advice. Trying to clarify his thinking for Gray, Teller speculated that Oppenheimer would not knowingly or willingly endanger the safety of the United States. To that extent, he advised, there was no reason to deny clearance. But in contradiction to his earlier statement to Robb, Teller continued, "If it is a question of wisdom and *judgment*, as demonstrated by actions since 1945, then I would say one would be wiser not to grant clearance." Understandably, Teller admitted he was a "little bit confused on this issue, particularly as it refers to a person of Oppenheimer's prestige and influence."[61] Nevertheless, he successfully summed up the substance of the hydrogen bomb charges, which Green had drawn from Teller's FBI interview.

ALLEGATIONS: THE CHEVALIER AFFAIR

The third controverted allegation related to the well-known Chevalier incident. This allegation was disputed, not because there was any doubt that the incident had taken place but rather because there was uncertainty about the facts of the case and the significance of subsequent meetings between Oppenheimer and Haakon Chevalier at Princeton in 1950 and in Paris in 1953. Although the Chevalier incident stood as the single most important issue raised by the statement of charges, the facts of the matter have never

been fully disclosed, nor has the importance of this single incident in bringing about Oppenheimer's ultimate downfall been fully understood.

Sometime in 1942 when Russian armies were battling for their very existence, Peter Ivanov, secretary to the consulate-general of the Soviet Union in San Francisco, asked George C. Eltenton, a British citizen employed by the Shell Development Corporation, to assist the Russians in obtaining information concerning the secret atomic research conducted at the University of California Radiation Laboratory. Ivanov suggested that Eltenton might contact either Lawrence, Oppenheimer, or perhaps Alvarez.[62] Later in 1946, when interviewed by the FBI, Eltenton was not certain that the third scientist was Alvarez, although that was his best recollection. In fact, Alvarez was not at Berkeley at the time, but Ivanov may not have known this. Of the three, Eltenton knew only Oppenheimer slightly but not enough to approach him. Instead, he suggested that Chevalier, a Berkeley professor known to be a close friend of Oppenheimer's, might serve as a contact with the scientists. Subsequently, Eltenton approached Chevalier with the same request on the grounds that the Soviet armies needed the information in their struggle against the Nazis. Chevalier was uneasy about Eltenton's request, but he agreed to keep the matter confidential even from his wife.[63]

Later Oppenheimer invited the Chevaliers to dinner. While both men were in the kitchen mixing drinks, Chevalier casually mentioned his conversation with Eltenton. It is uncertain whether Chevalier merely reported his meeting with Eltenton or mentioned details of the scheme, including the proposed contacts with Lawrence and perhaps Alvarez. But Oppenheimer stated in no uncertain terms that the idea was terribly wrong, and thereupon Chevalier dropped the subject immediately. Thus, Oppenheimer saw no danger in the incident, and, because he was confident Chevalier was no spy, he neglected to report it to security officers at the laboratory. Besides, he was soon swept up in events that demanded his utmost attention. On March 25, 1943, Oppenheimer left California for New Mexico to establish the Los Alamos laboratory.

Having assumed command at Los Alamos, Oppenheimer became more sensitive to security requirements. Concerned now that Eltenton bore watching, he alerted Lieutenant Colonel John Lansdale, Jr., Manhattan Project security officer, to the fact that Eltenton had tried to contact scientists on the project. Not surprisingly, the security officers wanted more details, and on August 23, 1943, Oppenheimer was cross-examined about this matter by Lt. Colonel Boris T. Pash, an Army counterintelligence officer stationed at the Presidio in San Francisco. Unknown to Oppenheimer, the interview was recorded.

Oppenheimer had not anticipated Pash's interrogation and thus was unprepared for the grilling he received. Pash was particularly interested in

indentifying Eltenton's confederate and the other scientists who might have been approached, but Oppenheimer, wanting to protect himself, Lawrence, and Alvarez, as well as his friend Chevalier, refused to divulge any more names. Again and again Pash probed, but each time Oppenheimer demurred by responding only that approaches had been made to three persons, two of them (presumably Alvarez and himself) located at Los Alamos. Oppenheimer's story, although misleading, was accurate as far as it went; unfortunately, thereafter, it became confused and twisted.[64]

Determined to ferret out the truth after additional unsuccessful interviews with Oppenheimer, Lansdale and Pash asked Groves to order Oppenheimer to name the intermediary. Groves eventually complied, but only after a preliminary conversation with Oppenheimer failed to elicit the information voluntarily. Groves thought Oppenheimer was acting like a schoolboy in protecting his friends, but on December 12, 1943, he learned
96 that Oppenheimer had family concerns as well: apparently Chevalier had also talked to his brother, Frank. As the plot thickened, the truth was irretrievably lost. Had Chevalier actually approached both Oppenheimer brothers, or had he spoken only to Frank, who then turned to his older brother for advice? Was Oppenheimer trying to shoulder the entire burden for his brother and friends? Obviously, a great deal was at stake, including the project. Thus, whatever his motives, Oppenheimer secured Groves's pledge not to report his brother's name to the FBI, thereby incredibly implicating the head of the Manhattan Project in his story. Back in Washington, Groves wondered whether he was bound by his promise to Oppenheimer. Advised by his aides that he had a higher obligation to national security, Groves nevertheless omitted Frank Oppenheimer's name from the dispatches alerting the field officers to the chain leading from Eltenton to the nuclear scientists.[65]

There, for the moment, the matter rested. Oppenheimer had been forthcoming in all details of the incident except the names of the other scientists, for which he was not pressed. With no immediate threat to the project and with the principals all under surveillance, Groves saw no need to challenge Oppenheimer further. Besides, the FBI and Army security preferred to make no move until an overt act of espionage had been committed. Premature questioning of either Eltenton or Chevalier might not only drive the suspected spy ring further underground but would also confirm for the Russians the key figures in the American atomic bomb project.

In 1946, when the FBI finally interviewed Eltenton, Chevalier, and Oppenheimer, the truth became even more confused. Picked up and questioned simultaneously, Eltenton and Chevalier were cross-checked during their interrogation. At first Chevalier admitted nothing but ultimately confessed he had been approached by Eltenton. He insisted, however, he had talked to no one besides Oppenheimer, to whom he did not mention Eltenton's name. Eltenton, on the other hand, offered important additional infor-

mation. He recalled that Ivanov had suggested contact with three scientists: Oppenheimer, Lawrence, and a third whom he could not remember but guessed was Alvarez. After the unsuccessful meeting with Robert Oppenheimer, Eltenton dropped the matter but did try to help Chevalier to obtain a government position. By then, however, information in Chevalier's security file precluded his employment with the government.[66]

On September 5, 1946, the FBI interviewed Oppenheimer, after Chevalier had warned him of the government's investigation. Believing that his old friend was in trouble for his wartime involvement with Eltenton, Oppenheimer tried to explain to the FBI how he had wanted to warn security officers about Eltenton's spying without identifying his innocent friend. To emphasize the importance of Eltenton's threat, he told the special agents, he had concocted a "complicated cock-and-bull story" about three scientists whom Eltenton sought to contact; actually he thought that he had been the only person contacted by Chevalier. He implied that in this matter the FBI need investigate no further. Significantly, no mention was made of Frank Oppenheimer at this time by his brother, Eltenton, Chevalier, or the FBI.[67]

Oppenheimer's repudiation of his "cock-and-bull story" created serious questions concerning his veracity in 1946, and later in 1954, when he offered essentially the same explanation to the Gray board. He did not know, obviously, about Eltenton's identification of the three scientists. But what explained his backing down from the original story, which seems to have been authentic? It is always possible, but unlikely, that Oppenheimer had concocted his original story without knowing how closely it conformed to the actual facts. If this were true, then he had intended to lie in 1943 but attempted to tell the truth in 1946 and after. Alternatively, perceiving his friend's trouble but confident that Chevalier had given the FBI no additional information, he may have changed his story in 1946 to protect the identity of the scientists, and more particularly, that of his brother. Under this scenario, he would have told the truth in 1943 but would have lied to the FBI and the Gray board thereafter. Finally, Oppenheimer may have been trying to tell the truth all along. Like Eltenton, however, he may have forgotten most details that Chevalier did not help him reconstruct. In 1943, he was obviously alarmed about the prospects of Soviet espionage, and in a possible allusion to Alvarez's work at MIT, warned Pash that the Russians were interested in all kinds of information, including radar. By 1946, however, it was evident that neither Lawrence nor Alvarez had been tainted by the Chevalier affair, which had never gone beyond Oppenheimer. Thus, whether out of forgetfulness or because he was embarrassed by his exaggerated warning, Oppenheimer may have tried to adjust his 1946 story to fit the facts as he understood them. But once he came to believe he had lied to Pash, his only explanation was that his story had been a "fabrication and tissue of lies." His shame and contrition are apparent throughout the

transcript of the hearing.[68] Unquestionably, Oppenheimer's revised explanation would have been more convincing had he both avoided social contact with Chevalier after 1943 and mentioned his brother; as it was, he did neither.

It was perhaps significant that Lansdale recalled but one contact; Oppenheimer was not the only witness subject to forgetfulness about this issue. But Lansdale's recollection was of no assistance because the one person he remembered was Oppenheimer's brother, Frank.[69] Also appearing as a friendly witness, Groves nevertheless testified that he believed Frank Oppenheimer had been one link in the chain that Robert had tried to conceal. Understandably, Groves did not reveal fully the substance of Robert Oppenheimer's confession or the part he had played in keeping Frank Oppenheimer's name from the FBI.[70] Robb did not press Groves or Lansdale for this information but simply left it in the classified files beyond
98 Garrison's reach.

Additional derogatory evidence, not included in the Nichols letter and not examined here, was developed during the hearings. For the most part, this information dealt with Oppenheimer's associations with suspected left-wingers such as David Bohm, Giovanni Rossi Lomanitz, Bernard Peters, and Rudi Lamert. One item dealt with Oppenheimer's handling of Glenn Seaborg's ambivalent recommendation to the general advisory committee in 1949 concerning the development of the hydrogen bomb. Believing that fairness to Oppenheimer required that he be confronted with his accuser, Robb subpoenaed Borden toward the end of the hearings. By the time Borden took the witness stand, however, those present at the proceedings were benumbed by more than 2,800 pages of testimony. Except for squabbling over whether Borden should be allowed to read his November 3 letter into the record, Oppenheimer's lawyers did not challenge or ask to cross-examine the person who had instigated the suspension of clearance. After only three more sessions the hearings concluded on May 6, 1954.

THE GRAY BOARD DECISION

On May 27, 1954, the personnel security board, in a two-to-one decision with Gray and Morgan in the majority, recommended against restoring Oppenheimer's security clearance. With most allegations uncontested and only the Crouch incident denied and unproven, the board's principal task was evaluating the evidence rather than finding the facts. In that respect, the board found that Oppenheimer was loyal and discreet but nevertheless a security risk. The board acknowledged that it had received convincing testimony of Oppenheimer's devotion to his country and volunteered that "Dr. Oppenheimer seems to have had a high degree of discretion reflecting an unusual ability to keep to himself vital secrets." But the board also

asserted that in times of peril, the requirements of national security were absolute. Because there were reasonable doubts in their minds concerning Oppenheimer, they could not recommend reinstatement.

Gray and Morgan ultimately outlined four controlling considerations leading them to their conclusion. First, they found that Oppenheimer's "continuing conduct and associations" reflected a serious disregard for the requirements of the security system. Principally, Gray was disturbed by the arrogance with which Oppenheimer placed his own judgment above that of more responsible persons. Gray and Morgan perceived Oppenheimer's arrogance firsthand in the Trevor Gardner incident and the news "leaks" to Reston. More particularly, Gray noted his concern about Oppenheimer's behavior in the Chevalier affair and the hydrogen bomb controversy and his opinions on tactical weapons, nuclear submarines, nuclear-powered aircraft, continental defense, and long-range detection.[71] Oppenheimer's continuing contacts with Chevalier in 1950 and 1953 also reflected a disregard for the need to keep his associations above suspicion. With the exception of Chevalier, however, the hearings and the security file revealed no significant contact between Oppenheimer and his prewar left-wing associates after 1943. Of course, he had continued to live with his wife and to see his brother and sister-in-law, and once he met Bohm and Lomanitz on a Princeton street corner while on the way to the barbershop. But unless one was willing to read something sinister into these associations, Oppenheimer committed only one indiscretion—continuing his friendship with Chevalier. No doubt for the board that was serious enough.

The board also found Oppenheimer susceptible to influence that could have serious implications for the security of the United States. This finding, perhaps, was the most ironic of all. More than one witness had attacked Oppenheimer for his Svengali-like influence over friends and subordinates. Instead, Gray and Morgan seized on two isolated incidents as proof of the exact opposite—that Oppenheimer was unduly susceptible to the influence of others. In 1943, at the insistence of Edward U. Condon, Oppenheimer and Lawrence had unsuccessfully tried to obtain a draft deferment for Lomanitz. Again, supposedly under pressure from Condon, Oppenheimer had publicly modified his criticism of Peters before the House Un-American Activities Committee in 1949. Furthermore, even though he had been openly attacked by Condon in the press, Oppenheimer indicated to the board his willingness to support Condon. Apparently the board considered it a sign of weakness that Oppenheimer would vouch for someone who had criticized him personally. Even Gray and Morgan were uncertain whether these inconclusive incidents demonstrated a susceptibility to influence. As a supplement, therefore, they added that the incidents also reflected bad judgment, a conclusion that clearly raised the question of Oppenheimer's "understanding, acceptance, and enthusiastic support of the security system." Again, Oppenheimer's relations with Reston during the

hearings indicated either that he was susceptible to the journalist's influence or that he used extremely bad judgment. Either way, Oppenheimer's assurances were not to be trusted.

The most unsettling of the board's conclusions related to Oppenheimer's "conduct" in the hydrogen bomb project. In response to Nichols's charges that Oppenheimer had slowed down thermonuclear development, the board found specifically that he had neither circulated the reports in question nor discouraged other scientists from working on the project. As to the more general allegation concerning Oppenheimer's opposition, the board found that "because of technical questions involved," it could not categorically state that the project had definitely been delayed. Thus, with the specifications discredited, why did the charge not fall? Rather than dismiss the charge, the board accepted Teller's reasoning and found that Oppenheimer's lack of enthusiasm had delayed the initiation of a concerted
100 effort on the hydrogen bomb. Consequently, whatever the motivation, Oppenheimer had damaged the security interests of the United States. The board's finding, stripped of Teller's qualification, in effect condemned Oppenheimer for his sincerely offered, if incorrect, opinion.[72]

Finally, Gray and Morgan "regretfully concluded" that Oppenheimer had been less than candid in his testimony before the board. As Garrison noted in his brief to the Commission, this subjective finding was perhaps the most difficult of all to refute. It was also the most damaging to Oppenheimer's case. Without access to the classified files, Oppenheimer's lawyers and most subsequent commentators have assumed the board was referring to the scientist's testimony about the meeting of the general advisory committee in October 1949 and other matters relating to the hydrogen bomb controversy. No doubt these matters were in the minds of the board members, but from the board's perspective a more serious lack of candor was revealed in Oppenheimer's testimony on the Chevalier affair, when he had failed to be forthcoming about his brother. This failure became a major factor in Nichols's recommendation to the Commission.

When the hearings were over, Gray believed that the proceedings had been as fair as circumstances allowed. He granted that Oppenheimer and his counsel did not have full access to the documentation in possession of the board, but he did not believe that the deficiency had appreciably disadvantaged Oppenheimer. Gray admitted to some discomfort about Robb's aggressive cross-examinations and his piecemeal and surprise references "from various documents." But because Oppenheimer's veracity was a major issue, Gray ultimately justified Robb's prosecutorial methods on the grounds that only a vigorous and effective cross-examination could get at the truth.[73] Curiously, Robb had been inexplicably gentle when it came to pressing Oppenheimer, Groves, and Lansdale for the facts concerning Frank Oppenheimer's involvement in the Chevalier affair.

Whatever doubts Gray may have had concerning the fairness of

Robb's tactics were laid to rest when Robb volunteered to help Evans write his dissenting opinion. Evans's original pencil draft had alarmed Gray, who was less concerned by the dissent than he was by the prospect that the statement, if filed as written, would reflect unfavorably on Evans and probably on the work of the board itself. Thus, after completing his work on the majority decision, Robb in turn assisted Evans in preparing his brief. Evans could find no basis for denying Oppenheimer clearance. The charges relating to his left-wing past were old and twice evaluated; those pertaining to the hydrogen bomb controversy were utterly unproven. Evans observed that many of Oppenheimer's statements before the board still showed him to be naive but nevertheless extremely honest. But more than Oppenheimer's clearance was at stake. Evans expressed greatest concern about the impact a decision against Oppenheimer would have on scientific development in the United States and on American scientific prestige abroad. Hailed by some as an eloquent defense of Oppenheimer and science, in truth Evans's dissent was barely adequate, not even beginning to refute the arguments that Gray and Morgan had developed in detail.[74]

NICHOLS'S RECOMMENDATION

Under established Commission procedures, either the manager of the field office or the deputy general manager at headquarters was responsible for handling security cases in his area. The manager appointed the personnel security board and received its findings. Then the manager notified the subject of the board's recommendation, the manager's decision, and the subject's right to appeal the findings to a personnel security review board. In addition, the manager also had the right of appeal. Should the case be appealed, the review board, if it chose, could take additional testimony, hear oral arguments, or receive supplemental briefs from counsel. Again, the manager made the final decision, based on the files, the boards' recommendations, and his own judgment about the impact upon the atomic energy program if the clearance were denied.[75]

The Oppenheimer case presented the Commission an anomaly, not only because of the importance of the case but because it was heard at headquarters. Because the Commission had no deputy general manager at the time, the responsibility devolved on Nichols, who of necessity worked very closely with the Commissioners. Furthermore, as Murray, Smyth, and Zuckert argued, the Commission could not avoid accepting direct responsibility in this matter. Under these circumstances, the Commissioners rather than the manager would exercise final judgment in the Oppenheimer case.[76]

Garrison advised Oppenheimer to waive his appeal to a review board so that the case could go directly to the Commission, as he had always

wanted. With Oppenheimer's contract due to expire on June 30, there was always danger that a delay would render the case moot and damagingly unresolved. Unfortunately, having sacrificed his appeal to a review board, Oppenheimer no longer had a forum in which to argue his case. Garrison's request to appear before the Commission to present oral arguments on Oppenheimer's behalf was refused without explanation. This move left Garrison absolutely in the dark about Nichols's recommendation to the Commission. While preparing his rebuttal, Garrison also felt more keenly than ever his failure to secure a clearance. The Commission was required to reject his request for access to the pertinent file material because, at Robb's suggestion, the staff had discontinued processing Garrison's application for clearance during the Gray board hearings.[77]

Nichols's recommendation, presented to the Commission on June 12, 1954, was a forceful document in which the general manager showed his long distrust of Oppenheimer. From the earliest days of the Manhattan Project, Nichols had been uncertain of Oppenheimer's loyalty and had opposed giving him a security clearance. Even without evidence of disloyalty, Nichols believed Oppenheimer had endangered American security by both recruiting questionable people for the program and seriously disregarding the security system. Candidly, he confessed to the Commission that not until he was appointed general manager had he been in a position to "take action" regarding Oppenheimer.[78] He presented the Commission with a brief that might be called the Nichols model for justifying suspension of Oppenheimer's clearance. According to Nichols, the situation could be described with mathematical curves. While Oppenheimer's access to classified information remained high and constant, his usefulness to the government had been steadily declining since the end of World War II. Nichols also charted Oppenheimer's "Communist associations" on a downward curve between 1943 and 1954, but as associations decreased, the risk from those associations increased. In other words, although usefulness and left-wing associations had decreased as a consequence of the Cold War, the danger from Oppenheimer actually increased.[79] Finally, Nichols was not troubled by the intimation that Oppenheimer's clearance had been suspended on the basis of old information. Quite the contrary, he told the commissioners, never before had the facts of the files been comprehensively reviewed; indeed, evaluating all the derogatory information together rendered the old material new.

For obvious reasons, Nichols indicated that he concurred in the findings and recommendations of the board, but in fact his letter to the Commission contained a significant shift in emphasis. First, Nichols rejected the findings concerning the hydrogen bomb controversy except "as evidence bearing on Dr. Oppenheimer's veracity." Nichols said that technical opinions could have no security implications unless they were coupled with sinister motives, and "the evidence establishes no sinister motives on the

part of Dr. Oppenheimer in his attitude on the hydrogen bomb, either before or after the President's decision." In effect, he rejected one of the board's "controlling considerations."

Nichols recommended rejecting Oppenheimer's clearance on three grounds: the Chevalier incident, his lack of veracity, and his past and continuing associations. Nichols thus altered substantially the grounds for decision. With susceptibility to influence and the hydrogen bomb controversy eliminated as considerations, the Commission's refusal to allow oral argument became manifestly unfair. As Smyth prophetically warned: "If we give Dr. Oppenheimer's attorneys no opportunity to comment on the Nichols's letter, we will be open to grave criticism when the letter is published."[80] The Nichols brief, Smyth realized, was an important document in the proceeding, not a simple letter of transmittal.

Nichols, with Robb's assistance, briefed the Commission on his analysis of the case; he emphasized that he had focused on the Chevalier affair, with the rest supplemental. "If you feel I am wrong on the Chevalier incident," he told the Commissioners, "then you can say I have gone overboard on some of these other things." Nichols had hoped that Oppenheimer could clarify the Chevalier incident during the hearings, instead of leaving the situation as confused as ever. If Oppenheimer was truly attempting to protect his friend in 1943, Nichols wondered why he had told the "cock-and-bull story," which was far more damaging to Chevalier than his subsequent version given to the FBI in 1946. Although Nichols was upset that Oppenheimer had not been forthcoming, he did not explain why Robb failed to cross-examine Oppenheimer, Groves, or Lansdale on this point. Nor did he explain why the man with the clearest recollection of the events—William A. Considine, Groves's chief legal adviser—was not called to testify.[81]

Nichols thought the Chevalier incident provided the principal evidence for Oppenheimer's lack of veracity. However the uncertainty was resolved, Nichols believed Oppenheimer a liar. But because the unchallenged evidence in the files indicated strongly that the 1943 version of the incident was more accurate than the later less damaging 1946 account, Nichols and Robb saw the possibility that Oppenheimer had lied to the Gray board when he repudiated the "cock-and-bull story." Oppenheimer's motive, Nichols assumed, was the same that had prompted him to request Groves's confidence—to protect his brother Frank. Shortly after Oppenheimer's clearance had been suspended by the President, Frank Oppenheimer had denied any involvement in the Chevalier affair.[82] Assuming his confession to Groves was accurate, Oppenheimer obviously could not confirm it without directly impugning his brother. The situation was similar to that in 1946 when FBI agents confronted him with a story that he could not repudiate without hurting Chevalier. In both instances, the simple and more innocent version shifted the burden away from his friend and brother to

himself; to some that might have appeared noble, but to Nichols it represented an inexcusable breach of the security system as well as outright lying.[83]

Finally, Nichols was alarmed at the sinister implications of Oppenheimer's visit to Chevalier in Paris in December 1953. The issue was officially labeled "continued associations" in his briefing to the Commission. Nichols expressed his personal fear that Oppenheimer's visit was not entirely social or innocent. "The non-charitable view is this," he explained to the Commissioners, "why would Oppenheimer of his own initiative come here to Washington to see Ken Fields to get a briefing on weapons, go out to Los Alamos on a briefing of weapons, just prior to going to Paris to see Chevalier?"[84] For Nichols the implication was self-evident and unacceptable. As he had told the Commission, if they accepted his premise concerning the relationship between Oppenheimer and Chevalier, all else would fall into place.

WHITE HOUSE REACTION

At the White House, Eisenhower agreed with Nichols's assessment of the impropriety of Oppenheimer's Paris visit with Chevalier. "How can any individual report a treasonable act on the part of another man and then go and stay at his home for several days?" the President asked. "It just doesn't make any sense to me."[85] Although Eisenhower had his facts garbled—the Chevaliers had only entertained the Oppenheimers for dinner—the President harbored no second thoughts about his suspension of clearance. When informed that Oppenheimer and Garrison under pressure from Reston were contemplating release of both the Gray board findings and Garrison's rejoinder to the Commission, Eisenhower commented that Oppenheimer was acting just like a communist, using all the rules to win public sentiment through martyrdom. Nevertheless, the President was determined above all else that the Commission "must act decent on this and must show the people of the country that we are more interested in trying to find out the facts than to get headlines like McCarthy does."[86]

In addition to the squeeze between Oppenheimer and McCarthy, Strauss reported that the Truman appointees to the Commission—Murray, Smyth, and Zuckert—were playing politics with the Oppenheimer case. Murray, especially, was suspected of leaking the Commission's discussion to several newspapers as part of his continuing fight against Strauss. As late as June 10, Strauss estimated that the three Commissioners would vote to restore Oppenheimer's clearance in order to embarrass the Republican Administration. Strauss cited the Commission's decision to rule on the case and its haste to decide the matter before Zuckert's term expired on June 30 as evidence of their determination to save Oppenheimer at the chairman's

expense. Eisenhower sympathized with Strauss and assured him that he was more determined than ever to secure a Republican majority on the Commission following Zuckert's retirement.[87]

Suspicions and acrimony deepened over the debate whether to publish the Gray board hearings. Strauss learned from the FBI that Garrison and Oppenheimer feared publication of the transcript would greatly harm Oppenheimer's case. In order to mitigate the damage, Oppenheimer again discussed with Reston the possibility of releasing prior to the Commission's decision excerpts from the transcript most favorable to Oppenheimer.[88] Strauss, who naturally wanted to beat him to the punch with a full disclosure of the hearings, encouraged Gray to request publication of the unclassified version of the hearings. Unfortunately for Strauss, Gray had previously assured each witness that the proceedings, in accordance with Commission regulations, would be kept strictly confidential; furthermore, Gray had promised that the Commission would take no initiative to release information on the hearings. It would seem that the Commission could do nothing but wait for Oppenheimer to act.[89]

Fortuitously, Strauss found his excuse for publication of the hearings. Overwhelmed by the massive transcript and files, Smyth had asked two Commission officials to prepare a summary of the case listing each of Nichols's charges along with Oppenheimer's reply, pertinent file material, and related testimony. The summary of evidence condensed the entire case into 241 convenient pages. Also pressed to review the transcript and evidence, Zuckert obtained a copy of the summary and took it with him on the train to Boston on Saturday, June 12. In the confusion of disembarking his family from the train in Boston, Zuckert forgot to pick up the summary, which was later recovered by the FBI. Strauss, reporting the incident to the White House, relayed his suspicions that Zuckert had actually passed the document on to Oppenheimer's friends. With the material compromised, Strauss believed there was no choice but to publish the hearings as quickly as possible. Murray and Smyth blocked immediate action, principally on the grounds that the Commission had an obligation to protect the confidential testimony of the witnesses. But after Nichols secured releases from the board and witnesses, only Smyth held out against publication, on the grounds that the testimony should not be released until the Commission had made its own decision.[90]

THE COMMISSION DECISION

Strauss did not realize it, but the vote to publish the Gray board hearings anticipated the Commission's ultimate division in the Oppenheimer case. Uncertain of the vote until three days before Oppenheimer's contract was due to expire, Strauss reported to the White House on June 27 that the

President's suspension would be upheld by a vote of four to one, with Smyth dissenting. Strauss accepted White House congratulations for doing "a wonderful job," but it is problematical whether he personally influenced any decision other than Campbell's.[91]

Actually, the Commission delivered five opinions in the Oppenheimer case. Strauss wrote the majority opinion in which Zuckert and Campbell concurred. Both Zuckert and Campbell, however, also submitted separate opinions of their own. In addition, Murray and Smyth submitted independent opinions in the matter; Smyth's, of course, was a dissent. The decision was officially made on June 28, 1954.[92]

Smyth's dissent offered a logical and sympathetic explanation of the derogatory information in the files. Noting the "clear conclusion" of the board that Oppenheimer was completely loyal, Smyth could not concur that he was nevertheless a security risk. With respect to the Chevalier episode,
106 Smyth found the incident inexcusable but understandable and without serious consequence for American security. Furthermore, he failed to find any pattern of "continuing association" beyond minor "occasional incidents of a complex life." As for Oppenheimer's alleged lack of veracity, Smyth concluded: "Unless one confuses a manner of expression with candor, or errors in recollection with lack of veracity, Dr. Oppenheimer's testimony before the Gray board has the ring of honesty." According to Smyth, the only question to be determined by the Commission was whether Oppenheimer might intentionally or unintentionally reveal classified information to persons who should not have it. His character and associations were important only insofar as they indicated the likelihood of security violations. If one began with the assumption that Oppenheimer was disloyal, Smyth continued, the derogatory information might arouse suspicion. But, if the entire record were read objectively, Smyth argued, Oppenheimer's loyalty and trustworthiness emerged clearly, and the various disturbing incidents became understandable and unimportant. Smyth evaluated the whole man: Oppenheimer's contributions to the nation, his disassociation from subversive organizations after 1942, his mature view of the communist threat expressed repeatedly in high government councils between 1945 and 1953, and, finally, the high tribute and expressions of confidence given by some twenty-five witnesses of impeccable character and high responsibility in Oppenheimer's behalf. He weighed all this information, the favorable and the unfavorable, and decided that Oppenheimer's employment would not endanger American security but rather was "clearly consistent with the interests of the national security."

In sharp contrast to Smyth's opinion, Murray was the only person involved in the case to find Oppenheimer "disloyal." Murray offered a legalistic and extremely rigid definition of loyalty. After tracing the derivations of the concept, Murray concluded that a person's loyalty must be judged against obedience to the security system. Such a standard provided

the decisive measure of one's loyalty to one's government. In addition, the communist conspiracy had created special problems for the United States, which had been forced to erect a system of laws and executive orders designed to protect the government "against the hidden machinery of subversion." When applying his loyalty test to Oppenheimer, Murray found a frequent and deliberate disregard for those regulations that restricted associations and a seriously deficient cooperation with the security system. On this basis, he determined that Oppenheimer was "disloyal."

Murray's opinion was deficient in several respects. In contrast to every other opinion, he did not specify or allude to any evidence to support either of his findings. In his only reference to the facts of the case, Murray reversed his original position by placing no significance at all on the evidence relating to the thermonuclear controversy. Instead, he eloquently rejected the idea that any influence of disloyalty could be drawn from opinions offered in good faith to the government. Thus, one must read between the lines to find the evidence that disturbed Murray. In doing so, it would appear that he based his decision almost entirely upon the Chevalier affair and particularly on the meetings between Oppenheimer and Chevalier in 1950 and 1953. In strictly following Nichols's logic, however, Murray failed to balance "the whole man" against deviation from the norm of conduct revealed in Oppenheimer's contacts with Chevalier. Murray's opinion was a syllogism founded on a false premise: the security criteria established norms for loyal citizens; Oppenheimer deviated from the norm; therefore, Oppenheimer was disloyal. It is evident that once the hydrogen bomb charges were swept away Murray had difficulty finding adequate ground for denying clearance. His inflexible standard allowed him to focus on the derogatory facts without evaluating their importance.

On the other hand, Campbell's opinion was ambiguous. In general, he viewed his responsibility as the narrowest possible appellate review. After summarizing the proceedings against Oppenheimer, he concluded that the board had conducted a fair hearing with honesty and integrity. Campbell not only sustained the recommendations of the board and the general manager, but by signing the majority opinion he also concurred in the Commission's wide-ranging review and reevaluation of the evidence. Given the striking differences between the board's findings and Nichols's recommendations, Campbell's position made it impossible to determine just which opinion he accepted. His confusion, however, pointed up the injustice of denying Oppenheimer a chance to answer Nichols's recommendations. Oral arguments before the Commission might have helped to clear the confusion apparent in Campbell's opinion.

Zuckert's statement also differed sharply from Murray's. He rejected Murray's idea that any deviation from the security system amounted to disloyalty. Obviously referring to the Chevalier affair, he stated that no single act of lying or isolated disregard of security considerations and obstruction

of security inquiries would by themselves have been decisive. But when he perceived "a combination of seriously disturbing actions and events" as reported in the Oppenheimer case, he decided that risk to security had passed acceptable bounds. Zuckert correctly understood that his task was to weigh the risks presented by the individual against what was "at stake and the job to be done." Zuckert's opinion might be criticized for its failure to state the need for weighing favorable information, which in Oppenheimer's case was considerable, but perhaps this was implicit in his duty "to determine how much of a risk is involved in respect to any particular individual." Zuckert's statement is logical and convincing, subject to criticism only by applying Zuckert's standards against the facts of the Oppenheimer case; this is done in Strauss's analysis of the majority opinion.

The majority decision, Strauss said, stood on two legs: "fundamental defects in character" and Oppenheimer's "associations." Following
108 Nichols's recommendation, Strauss rejected categorically any inference that the Commission's decision was based in any way on Oppenheimer's role in the thermonuclear controversy. As to "character," the majority cited six incidents in which Oppenheimer had behaved improperly. Not surprisingly, the Chevalier affair headed the list. Strauss reflected the same ambivalence toward the evidence as Nichols, and he arrived at essentially the same conclusion. Whether Oppenheimer lied to Pash and Groves in 1943 or to the Gray board in 1954 was virtually academic because the results were about the same: on the one hand, he had lied to federal security officers; on the other, he had committed perjury before the board.

The remaining five illustrations merely supplemented the main example. Strauss reiterated the evidence concerning Lomanitz, Peters, the Seaborg letter, and other incidents. He noted that Oppenheimer had told the FBI in 1950 that he did not know that Joseph Weinberg had been a communist until the fact became public. As the recording of his 1943 interview with Lansdale revealed, however, Oppenheimer knew Weinberg to be a communist much earlier. Yet how was this an illustration of his defect in character? What deception could Oppenheimer hope to accomplish by lying to the FBI in 1950 when he had admitted knowing Weinberg to be a communist in 1943? Clearly, the whole interview revealed nothing but a failure in recollection; but viewed against the Chevalier incident, the lapse suggested to the majority a pattern in which Oppenheimer mitigated his stories after 1946. Significantly, the majority opinion stated that its findings on Oppenheimer's "fundamental defects of character" were not limited to six examples cited but that "the work of Military Intelligence, the Federal Bureau of Investigation and the Atomic Energy Commission—all at one time or another have felt the effect of his falsehoods, evasions and misrepresentations." The charge was sweeping and tantalizing in that it suggested large reservoirs of information yet untapped in the file. In fact, as Harold Green knew, there was nothing more, unless one looked at the ma-

terial relating to the hydrogen bomb charges. Perhaps, in a backhanded way, that was what the Commission meant to imply.

To substantiate the second leg of the majority opinion, Strauss cited Oppenheimer's left-wing associations prior to 1942 but was careful to state that these well-known associations were not in themselves a controlling reason for the Commission's decision. Not surprisingly, Oppenheimer's meeting with Chevalier in Paris provided the main basis for this finding. Here the failure to underscore favorable information was particularly damaging because the majority neglected to point out that one meeting had included André Malraux, an important adviser to Charles De Gaulle. The most intelligent view of this episode was expressed in the hearings by George F. Kennan, who believed that senior government officials must be permitted maturity of judgment to know when and under what circumstances they can see a person:

> If they come to you sometimes, I think it is impossible for you to turn them away abruptly or in a cruel way, simply because you are afraid of association with them, so long as what they are asking of you is nothing that affects your governmental work. I myself say it is a personal view on the part of Christian charity to try to be at least as decent as you can to them.[93]

Kennan's plea for Christian charity succumbed to Nichols's fears of communist conspiracy. In its decision, the majority made no mention of Oppenheimer's work at Los Alamos or to his years of faithful service and devotion to duty. The Commission's decision read like a judgment in a criminal case demanding punishment for misconduct in the past rather than a security evaluation predicting Oppenheimer's future behavior, based upon all relevant data. This failure to evaluate the "whole person" was the Commission's most fundamental error. In the final analysis, even the Commissioners apparently realized the flimsiness of their rationale for denying clearance. They could not in good conscience say that Oppenheimer's clearance would "endanger the national security" or be inconsistent with the requirements of the security system. Instead, they declared that "concern for the defense and security of the United States requires that Dr. Oppenheimer's clearance should not be reinstated." Ironically, neither the Atomic Energy Act nor the regulations required such a finding.

AFTERMATH AND CONSEQUENCES

Decades later, the Oppenheimer case continued to haunt those who participated in it and to fascinate those who discovered it as either history or legend. It involved primarily one of the most celebrated scientists of modern times, a man whose career seemed to epitomize the awesome role that

science had come to play in American life. And, as the Commission's formal opinions made clear, the case did not involve mere political opinions or scientific judgments but more fundamental matters of morality, loyalty and service to one's country, and ultimately the role of the scientist in a democracy. The very terms in which the issue was cast suggested themes that transcended both twentieth-century America and modern science. Some observers could not help thinking of a modern-day Galileo on trial for speaking the truth about nature or even a new Socrates accepting the judgments of lesser men. In more contemporary terms, some believed that Oppenheimer, as a victim of McCarthyism, shared a martyrdom similar to Scopes, Sacco and Vanzetti, or the Rosenbergs and Hiss.

If such large implications of the Oppenheimer case did not assure it a place in American consciousness, the publication of the transcript surely did. The transcript, with its hundreds of pages of testimony ranging over the whole history of nuclear development in America since 1942, provided an extraordinary insight into the hitherto secret world of the atomic energy establishment. As one journalist remarked, "The Oppenheimer transcript is Operation *Candor*."[94] The debate over the hydrogen bomb, the fight among the nuclear scientists and with the Air Force over national defense policy, and the scores of other previously classified episodes were outlined in vivid and often embarrassing detail. The human foibles of petty falsehood, pride, misunderstanding, self-deception, and envy were preserved for all to see. Given the rich human quality of the material and the dialogue from the transcript, it was not surprising that playwrights soon saw the dramatic possibilities of the Oppenheimer case.

For those whose lives were touched directly, the case had added dimensions. No participant would ever be the same again. For Oppenheimer and his family, the impact was obvious and devastating, and it did not end with the Commission's decision. The Commission and the FBI were frightened by intelligence reports in August 1954 that Soviet agents were trying to arrange for Oppenheimer's defection and even more by Oppenheimer's decision to take his family on a sailing vacation in the Virgin Islands.[95] Obviously the case had not closed with the stripping of Oppenheimer's clearance and credentials as a government official. For more than a decade, Oppenheimer would linger in exile, cut off from a world that had been the center of his career, a world he had done much to create.

For others the repercussions were long-lasting if not so severe. Strauss, Teller, Borden, Green, Robb, Garrison, Smyth, Murray, and Zuckert would never in the eyes of the public be able to shake off their identification with the case. All would share in varying degrees public criticism and vindication for their roles in the drama. An episode that under other circumstances would have soon passed from public memory would indelibly mark their careers, taint their subsequent achievements, and embitter relationships among them for years to come.

Vexing and painful as the scars on individuals were, the institutional effects of the Oppenheimer case were probably more significant. Initially the Commission as a federal agency drew relatively little criticism from the public. For the most part, press reaction was not hostile; nor, with the exception of the Alsops' diatribe, *We Accuse!*, did journalists take up Oppenheimer's cause after the Commission's final decision. Slightly more than three hundred individuals outside the establishment took time to express their opposition to the decision while almost fifty approved.[96]

The greatest criticism came from scientists, especially those within the atomic community. Even before the hearings were concluded, twenty-seven physicists from the University of Illinois signed a statement in the *Bulletin of the Atomic Scientists* protesting the hydrogen bomb charges against Oppenheimer. In the same issue, thirteen prominent scientists, including Linus Pauling and Albert Einstein, affirmed their faith in Oppenheimer. Hans Bethe, president of the American Physical Society, telegraphed the society's denunciation of the Gray board's decision before the Commission's final vote. Petitions signed by eleven hundred scientists and staff from the national laboratories and leading universities expressed indignation at the action against Oppenheimer and warned of damage to Commission programs. Nichols was so concerned about the protest from Argonne that he considered going to Chicago personally, as he had done under similar circumstances in 1945, to explain the government's action to the scientists. He was dissuaded only when Walter H. Zinn, director of the laboratory, assured him that the visit was unnecessary.[97]

Strauss was troubled if not surprised by the scientists' reactions and attempted to explain the Commission's position at the July meeting of the general advisory committee. Recognizing that almost half of the petitioners had worked at Los Alamos, where Oppenheimer had been the wartime director, Strauss decided to present a presidential citation to the laboratory for its extraordinary achievement. The gesture, dubbed "Operation Butter-Up" by one newspaper,[98] was too transparent to be effective. There was also some concern expressed through the general advisory committee that the Commission would launch a massive review of security clearances using questionable associations as derogatory evidence. Such fears stemmed directly from the formal opinions of Murray and Zuckert in the Oppenheimer case.[99]

Despite warnings from the general advisory committee of low morale in the Commission's laboratories, no mass exodus of disenchanted scientists occurred. Neither did recruitment for Commission projects lag, nor did vital programs suffer from a lack of qualified scientists. How the Oppenheimer case affected the career decisions of individual scientists has never been determined in any systematic way. Some saw the Commission's action as outrageous and sickening; in the minds of others, Oppenheimer got what he deserved. There was, however, a subtle but permanent shift in

many scientists' perception of the Commission. Eight years earlier the scientists had seen the Commission as their agency, a new and enlightened institution that could, among other things, free the scientist from the restraints and indignities of military control. The Commission had justified that faith, but the Oppenheimer case had planted seeds of doubt. It was not likely that an agency that had destroyed the career of a leader like Oppenheimer could ever again enjoy the full confidence of the nation's scientists. To that extent, the effects of the Oppenheimer case were permanent and damaging.

CHAPTER 5

THE POLITICAL ARENA

James R. Newman, one author of the Atomic Energy Act of 1946, described the law as establishing "in the midst of our privately controlled economy a socialist island with undefined and possibly expanding frontiers."[1] Newman was referring to the sections of the act that gave the Commission absolute control over all fissionable materials, all facilities using or producing such material, and all information related to nuclear technology. Under the almost inflexible provisions of the law, the Commission had virtually dominated the development of nuclear technology in the five years since 1947. Other sections of the act exempted the Commission from the civil service system and from many administrative laws and regulations that applied to other government agencies. These exemptions gave the Commission an unusual degree of flexibility in administration and made possible the recruitment of a staff with capabilities exceptional in the civil service. Furthermore, the enormous sums appropriated by the Congress for military applications of atomic energy insured the agency a "standard of living" that few Cabinet departments enjoyed.

Living in this rarified atmosphere, the Commission could afford to exercise an unusual degree of independence from both the Executive and Legislative branches of the government, from the pressures of lobbyists and special interest groups, and from the political process as a whole. Before 1953 the Commissioners could say with more truth than could most government executives that their agency was untouched by the stain of politics. The golden days of privilege and isolation, however, were beginning to fade in 1953. The rising interest in nuclear energy within American industry, the determination of the Eisenhower Administration to reverse the trend toward greater governmental control of the economic system, the growing opportunities to use nuclear energy for civilian purposes and to encourage

international cooperation as a way to world peace—all these forces stimulated public interest in liberalizing the Atomic Energy Act of 1946.

These efforts would in part establish at least some bridges between the "island of socialism" and the mainland of the nation's "free enterprise system," open new channels for disseminating nuclear technology, and reduce the extent of the government monopoly. The process of amending the act would itself begin to lead the Commission and its staff out of the secret, sealed-off world of the atom. The points at issue in the legislative debate involved not so much the special considerations of nuclear technology but rather such broad policy questions as the role of government and private industry in the nation's energy economy. Such a debate alone would have inevitably entangled the Commission in the web of partisan politics. As it happened, the Dixon-Yates controversy, as Commissioner Zuckert put it, was "to deflower the AEC in a political sense."[2] By summer 1954, when the new legislation took effect, the Atomic Energy Commission would find itself in the middle of the political arena.

LEGISLATION FOR PRIVATE INDUSTRY

In formulating a nuclear power policy for the Eisenhower administration in spring 1953, the Commission had drafted legislation intended to remove some legal obstacles to participation by private industry.[3] The bill would have permitted, under license by the Commission, the private ownership of both power reactors and the fissionable material used as fuel in or produced by the reactors. Even the Commission, however, recognized that the bill was preliminary in several respects. It did not speak to such important matters as patents and contained no provision for international cooperation. Because Dean had no time to clear the draft within the Executive Branch before presenting it to the Joint Committee on May 26, 1953, the Bureau of the Budget asked the committee not to release the bill to the public.[4]

Review of the proposal within the bureau and other executive agencies quickly revealed major issues that went to the heart of Administration policy, not only on nuclear power but on other economic matters as well. There was general agreement within the Executive Branch, for example, that the government monopoly of reactors and fissionable materials would have to be relaxed in some way. But would such a relaxation weaken controls that seemed essential for safety and security reasons? And what would prevent the few large corporations like du Pont, General Electric, and Union Carbide, which had already attained a high degree of competence in nuclear technology as Commission contractors, from monopolizing the infant industry as licensees? Congressmen Chet Holifield and Melvin Price, two Democratic members of the Joint Committee, voiced concerns of public-power advocates, calling the Administration's proposal a vast "give-

away" of the public treasure. In their minds the federal government had invested more than twelve billion dollars in developing nuclear technology while industry had provided little financial support. Now the Administration proposed, they argued, to let a few giant corporations monopolize the technology developed at government expense. Holifield and Price would have been fascinated to know that within the Administration Sinclair Weeks, the conservative Secretary of Commerce, had expressed similar reservations. Weeks favored continuing government controls, not only to protect the national economy but also to reimburse the government for private use of a "national treasure" of fissionable materials.[5]

THE PATENT QUESTION

Not until summer 1953 did the Commission face the perplexing question of what to do about the patent provisions of the 1946 act. Under its terms no private patent rights could be obtained for any invention used in the production or utilization of fissionable material or atomic weapons. The act also required the Commission to declare certain patents affected by the public interest and therefore subject to compulsory licensing. Such a finding was required when the Commission determined that an invention utilized fissionable material or atomic energy and that licensing was necessary to effectuate the purposes of the act. In such cases, the owner was entitled to a reasonable royalty fee.

The government monopoly of nuclear technology since 1946 had been so complete that the Commission had had very little opportunity to apply the patent provisions of the act in nuclear power development. For contracts with the industrial study groups established in 1952 the Commission had insisted upon its right to determine the disposition of all patent rights to any invention that might result from the study projects. This restriction not only protected the government from the possibility of having to pay royalties for inventions made by the companies but also prevented these companies from securing a preferred patent position. Several industrial groups had already told the Commission that they would not accept this restriction on any activities subsequent to their initial studies.[6]

Lacking any special knowledge of patents, the Commissioners were reluctant to rush into a decision on new legislation. During three meetings in June 1953 they preferred to examine the broad implications of such legislation. On the one hand, they might err by not being liberal enough in encouraging industrial participation; on the other, they might open the doors to industry too quickly with disastrous results for the future. Zuckert feared that eliminating the compulsory licensing requirement for inventions related to utilizing atomic energy might be unwise. Although economic nuclear power appeared to be the first goal of industry, there was no guarantee

that the situation would not change. Zuckert thought that royalties paid under compulsory licensing would offer industry sufficient incentive for the time being.[7]

As a scientist, Smyth had less feel for patent law and administration than did any of his colleagues. He asked why a company should be entitled to a profit from an invention developed with government funds simply because the specific application of that invention lay outside the field of atomic energy, as the staff recommendation proposed. He was not impressed with the argument that the Department of Defense used such an arrangement in contracts with aircraft manufacturers. Smyth held that the situation was quite different in the case of nuclear energy: virtually all technology had been developed at government expense.

Dean, during the last weeks of his term as chairman, took a different view. He thought it was time to open up the broad area of atomic energy
116 use to the normal operation of the patent system. As long as the government was assured a royalty-free right to use these inventions, he thought it would advance development to permit broad patent rights. Marion W. Boyer, who had enjoyed a long career in industry before he became the Commission's general manager, agreed with Dean. He even went so far as to suggest that it might be necessary to risk giving some companies a preferred position in the industry in the interests of promoting rapid development of nuclear technology. As Dean warned, there might never be a nuclear power industry if the government continued to restrict the dissemination of technical information and denied industry the profit incentive for innovation.

Zuckert rejected the suggestion that he lacked enthusiasm for industrial development, but he did confess to deep concern about the possibilities of monopoly by a few large companies, particularly those holding major operating contracts at Commission facilities. He was worried that in the course of their work some of these companies might have developed inventions that technically lay outside the production or utilization of fissionable material. It was possible that some of these inventions were being withheld pending a liberalization of the act's patent provision. Zuckert suggested that instead of giving broad patent rights in a virtually unexplored field of technology, the Commission should advocate some form of compulsory licensing in the entire field of atomic energy.[8]

A few weeks later, after Strauss had become chairman, the Commissioners resumed the discussion with their patent advisory panel. All five members were authorities on patent matters and members William H. Davis and Casper W. Ooms had influenced the drafting of the patent provisions of the 1946 act. The advisory panel advocated a middle ground between complete freedom and complete restriction on patent matters. Davis thought the Commission should retain the right to find a specific invention affected with the public interest and should be able to require licensing of such an invention. John A. Dienner, a Chicago patent attorney,

supported Davis and suggested compulsory licensing for as long as twenty years. Commissioner Murray, who believed the panel was being too conservative, suggested that a five-year limit on compulsory licensing would be sufficient. Without venturing an opinion on that point, Ooms advocated compulsory licensing in principle, although he warned that industry would strongly object.[9]

The Commissioners took all these ideas under advisement in an executive policy conference at White Sulphur Springs, West Virginia, late in September. There were no records of the discussion, but the decisions were clear enough. The Commission's legislative proposal in October 1953 would have permitted private ownership of fissionable material as well as reactors, but there would be provisions spelling out the safeguards and recovery rights necessary to protect the national interest. No private patent rights would be permitted for inventions relating to the military uses of atomic energy, and all other inventions relating to the use of atomic energy would be subject to compulsory licensing at the Commission's discretion for five years.[10]

INFORMATION AND SECURITY

The Commission's proposal was designed to open the way for industrial participation in nuclear development, but it would not affect other provisions of the 1946 act that restricted the flow of technical information on several levels. Not only did the act severely limit the exchange of technical information with other nations, but it also posed troublesome obstacles to disseminating classified information within the atomic energy establishment and to allied governments in Europe. The Commission had been proposing revision of these restrictive sections of the 1946 act for several years. Although some of these proposals were not much more than "housekeeping" amendments, their total effect would have significantly opened up nuclear technology.[11]

Section 10 had become one of the most awkward sections of the 1946 act. It provided for a special category of information, called "restricted data," inflexibly defined to include virtually all atomic energy information of any security significance. The act also imposed special restrictions on disseminating restricted data to foreign nations and required a full background security investigation for all Commission employees, contractors, and persons receiving restricted data from Commission contractors. This last restriction was especially burdensome because it prevented Commission contractors from giving restricted data to military officers or employees of the Department of Defense, although the latter could receive such data directly from the Commission. Section 10 even required a full investigation for construction workers and others who had access only to relatively non-

sensitive information that was legally in the restricted data category. In autumn 1953 the Commission staff gave some thought to recommending elimination of the restricted data provisions of Section 10 altogether but concluded that repeal would weaken security unless uniform and more effective regulations were established for the federal government as a whole.[12]

Perhaps no provision of the 1946 act had caused the Commissioners more anguish than the restrictions of Section 10 on the exchange of information with foreign nations. The act provided that until Congress declared by joint resolution that effective and enforceable international safeguards against the use of atomic energy for destructive purposes had been established, no exchange of information on industrial uses of atomic energy was permitted, although the exchange of basic scientific and technical information was encouraged. In an effort to preserve at least a semblance of the
118 cooperative arrangements that had developed during World War II with the British and the Canadians, the Commission had agreed to exchange basic scientific data in nine specified areas under a formal modus vivendi signed in 1948. As a Commissioner, Strauss had opposed anything but the narrowest possible interpretation of the nine technical areas, and Senator Hickenlooper had led an attack on the technical cooperation program when he learned that information on plutonium was being provided to the British under the modus vivendi. Following the bruising treatment the Commission received during the Hickenlooper investigation in summer 1949, and the revelation of Klaus Fuchs's treachery early in 1950, the modus vivendi was applied only in the strictest terms, much to the disappointment of the British and the Canadians.[13]

In 1951 the urgent need for feed materials to supply the rapidly expanding production of nuclear weapons had led the Congress to adopt an amendment to Section 10 that authorized exchanges of information on all manufacturing operations from the processing of feed materials through the production of fissionable materials. Although the amendment theoretically established a legal basis for exchanging reactor information, it did prescribe a cumbersome process involving review by the National Security Council, approval by the President, and a thirty-day waiting period before the Joint Committee before the proposed exchange could take place. The amendment also required a finding by the Commission that the recipient nation had adequate security standards to protect the information to be exchanged, but the Commission thought this provision would be very difficult to apply in any general exchange to technical data. Instead, the staff proposed an amendment that "there shall be no exchange of restricted data with other nations, except as authorized by the Commission upon a finding that the common defense and security will not be adversely affected." This amendment would obviate the review process and the waiting period and

would also permit the exchange of weapon information. The same determination by the Commission would be added to Section 5 of the act to permit distributing fissionable material to other nations and to permit persons to engage in producing such materials outside the United States.

THE COMMISSION BILLS

On November 18, 1953, the Commission dispatched the two draft bills to the Bureau of the Budget: the first, the "peaceful uses bill," would broaden the legal basis for industrial participation in nuclear technology; and the second, the legislative program, would provide for a freer flow of information. In sending a summary of the legislation to Eisenhower, Strauss informed the President that the Commission had hereby complied with his request of the previous March for recommendations on amending the 1946 act.[14]

By this time the President was reviewing a third or fourth draft of his Atoms-for-Peace speech and was moving rapidly toward proposals for international cooperation in industrial development of atomic power, which would require amendment of the 1946 act. The Bureau of the Budget promptly circulated the Commission bills to other executive agencies and departments, but White House demands for a quick response allowed insufficient time for careful analysis, especially by the departments most directly concerned. By December 11, 1953, the White House deadline for completing departmental review, only the Department of State, the Federal Trade Commission, and the Federal Power Commission had submitted comments; of these, the most substantive were the views of the Federal Power Commission. Jerome K. Kuykendall, the commission's chairman, raised the fundamental question of whether the rather general and unrestricted authority granted to the Atomic Energy Commission in matters of licensing, the sale of by-product power, and the purchase of by-product plutonium from power reactors would not constitute an abrogation of Congressional authority in the policy area. Kuykendall reminded the Commission that the Supreme Court had invalidated Franklin Roosevelt's National Industrial Recovery Act on this ground. Furthermore, Kuykendall argued, there was plenty of legislative precedent establishing precise criteria for executive departments and agencies to use in determining sale and purchase prices.

Kuykendall also criticized the vague language of the peaceful uses bill, giving the Commission discretion in issuing licenses. Instead he proposed mandatory conditions for issuing licenses to protect the Commission from charges of arbitrary denial or preferential treatment of licensees. Likewise, Kuykendall criticized the failure of the bill to provide specific standards for determining the adequacy of safety and security measures

proposed by licensees. Both regulatory commissions warned of potential difficulties in the vague and, to some extent, conflicting provisions intended to prevent violation of antimonopoly laws. The trade commission questioned the adequacy of the proposed five-year limitation on compulsory licensing of inventions and urged that the bill provide for mandatory review by the Attorney General of all licenses prior to issuance.[15]

These and other comments from the regulatory commissions reflected an impressive degree of administrative knowledge and experience that the Atomic Energy Commission and its staff would do well to heed. Although the Commission's legal staff did not precisely accept every suggestion, most comments were adopted in one form or another. In any case, it was valuable for the Commission to be exposed to the kinds of questions raised. As William Mitchell, the general counsel, reminded the Commissioners on December 7, 1953, the comments from the regulatory agencies raised some of the more important issues that the Commission would face in later stages of the legislative process.

Although the bills in their final form were still very similar to the Commission's early drafts, the legislative proposals were now closely identified with Eisenhower. The Atoms-for-Peace speech on December 8, 1953, had raised nuclear policy to the presidential level, and, in the public mind at least, the proposals for amending the 1946 act stemmed naturally from Eisenhower's statements before the United Nations. Both the State of the Union and budget messages in January 1954 stressed the importance of nuclear energy for both peaceful and military purposes and notified the Congress that the Administration was drafting legislation for greater international cooperation in atomic energy development. The draft prepared by the Commission staff did serve as a rough outline for the presidential message sent to Congress on February 17, but the message had been completely redrafted in the White House during the preceding two weeks. The legislative proposals were in a very real sense those of both the Administration and the Commission.[16]

THE JOINT COMMITTEE BILL

Although the President's message was a public document, the White House did not release the draft bills, which the Commission sent directly to the Joint Committee. It did not take Executive Director Corbin Allardice long to determine that, despite all the Commission's careful drafting, the bills could never be introduced as written because they were still cast as amendments to the 1946 act. The amendment approach had served well a year earlier when the Commission was taking its initial steps toward revision, but as the number of amendments increased, the rationale for the basic

structure of the act disappeared. It was now apparent to Allardice that the bills should be completely restructured as new legislation.

Chairman Cole and Allardice also perceived that whatever legislation the committee introduced should be embodied in a single bill. Holifield and Price had already attacked the 1953 industrial participation bill as giving a few large corporations a monopoly of nuclear technology. It seemed likely that other Democrats in Congress would take up that theme; then the large Democratic minority would succeed in defeating the bill. On the other side, a bill liberalizing the dissemination of information, particularly to foreign nations, seemed certain to come under attack by members of both parties who were wary of international cooperation and who insisted upon protecting the "secret" of the atomic bomb. If, however, one bill combined the two aims, then both groups would have to risk losing those parts of the bill they favored when they attacked the provision they opposed.

Although Allardice favored a completely new bill, drafting legislation from scratch would be a heavy and relatively unfamiliar task for the Joint Committee. Most mechanical aspects of drafting would fall on George Norris, Jr., who had replaced John T. Walker as committee counsel. Norris, dogmatic on the matter of private enterprise, had extensive experience in industry. Norris's professional background and ideological leanings suggested that he would be especially helpful in drafting legislation that would bring industry into atomic energy development. Norris was not only intensely interested in removing what he considered the serious infringement of the patent system accomplished in the 1946 act, but he also had strong views on licensing and other administrative procedures. Once Norris had the assignment to draft a new bill, he selected as his model the format and numbering system of the Federal Communications Act of 1934 and copied the licensing provisions of that act almost verbatim.[17]

The Joint Committee draft, however, was by no means the product of Norris and the staff. Cole and Hickenlooper both took a personal interest in the bill and committed themselves to long sessions, sometimes going into the evening, in drafting sections of the bill line-by-line with Allardice and Norris. When the preliminary draft was completed early in March, Allardice distributed copies to other committee members, and discussions in the larger group continued behind closed doors over the next five weeks. Although Edward Trapnell, as the Commission's liaison officer with the committee, was able to follow the general directions of the committee's thinking through his conversations with Allardice, some of the bill's provisions surprised the Commissioners when they received a draft on April 5.[18]

With only three days to review the bill before it was introduced in Congress, Strauss could suggest only that the Commission would present its views on the bill in executive hearings that were scheduled for early

May. By that time Mitchell and Trapnell had discussed the bill with the committee staff, and Mitchell had drafted a detailed commentary that Strauss presented at the closed hearings beginning on May 3, 1954.[19]

THE HEARINGS: INFORMATION AND SECURITY

Strauss began his commentary by focusing first on the sections of the Joint Committee bill dealing with information and security. Section 144 of the bill followed the Commission's draft in many respects by providing greater latitude in international cooperation, but the Joint Committee had made changes the Commission found troublesome. The Joint Committee version prohibited the communication of restricted data relating to the design or fabrication of atomic weapons, except external size, weight, and shape. Strauss told the committee that the Department of Defense objected to this restriction as seriously inhibiting the development of defense plans with the North Atlantic Treaty Organization.

Section 123 of the Joint Committee bill would apply to all international exchanges, for either peaceful or military purposes, the cumbersome review procedures that the Commission had found objectionable in the 1951 amendment to the 1946 act. The section would require an agreement for cooperation with each nation or regional defense organization, to be approved by the Commission and the President and then to be submitted to the Joint Committee for a thirty-day review. Under questioning, Strauss had to admit that the thirty-day waiting period had never delayed approval of a cooperative arrangement with the British and Canadians. The objection, he said, came from the Administration, presumably on the grounds that the thirty-day waiting period constituted a restriction on the executive powers of the President.

Strauss also expressed strong reservations about the Joint Committee's definition of restricted data, which reinstated the phrase "utilization of atomic weapons," a term the Commission had agreed to drop after a series of negotiations with the Department of Defense. He also objected to Section 145(c) that would have required automatic declassification of all restricted data after three years unless the Commission took positive action to retain classification. Strauss held that the millions of classified documents held by Commission employees and contractors made this provision administratively unworkable.[20]

THE "PRINCIPAL OFFICER" ISSUE

On the afternoon of May 3, Strauss turned from his prepared statement to a special problem that had been raised by the proposed language in Section

21. The Joint Committee draft stated that "the Chairman shall be the principal officer of the Commission." Strauss was concerned because the question of the respective roles of the chairman and the other Commissioners had been disrupting the harmony of the Commission for several months. In January 1954, when the Commission was attempting to sort out the many problems raised by the Oppenheimer case, Strauss had asked both Mitchell and the Attorney General whether he as chairman or the Commission as a whole could function as the "head of the agency" in personnel security matters. Failing to get any very helpful legal opinion, Strauss apparently kept the matter to himself; but when the Commission received the Joint Committee draft of the bill in April, the "principal officer" provision of Section 21 reopened the question of the chairman's role. Commissioner Murray immediately took up the issue, and, as Strauss reported to Cole, there had been "prolonged discussion" of Section 21 within the Commission. During April personal animosities between Strauss and Murray over this issue had risen to the flash point as Murray attempted to obtain copies of Strauss's January correspondence with Mitchell and the Attorney General.[21]

In the executive hearing on May 3, 1954, Strauss told the Joint Committee that the Commissioners had all agreed that the 1946 act was unclear in defining the responsibilities of the chairman in relation to those of the Commissioners, but there was still no consensus on how the situation might be remedied. Strauss himself suggested that an institution as large and complex as the Commission needed a chairman with more affirmative responsibility than the 1946 act provided, but he preferred to let his fellow Commissioners speak first on the issue.

Smyth, the senior member of the Commission, agreed that the chairman's role was ambiguous in the 1946 act, but he was not sure that ambiguity was undesirable; it had provided a certain flexibility, permitting the several chairmen and acting chairmen to establish various working relationships with their colleagues. Smyth admitted that the Commission form of operation was clumsy and inefficient at times, but he still preferred it to having a single "head of the agency." Smyth's real concern was that if the chairman's position were "too greatly strengthened," the other Commissioners might not have all the information required to exercise their legal responsibilities.[22]

The heart of the dispute became apparent when Commissioner Murray presented his case. Murray said he was concerned about the "trend toward centralization of authority in the Chairman" and that the proposed Section 21 accelerated that trend. He would accept a change making the chairman "the chief administrative agent and spokesman of the Commission" but only if the bill provided that all members of the Commission would have equal authority and responsibility and would have "full access to all information relating to the performance of these responsibilities."[23]

Murray's statement carried two implications: first, Strauss had proposed the "principal officer" provision in an attempt to dominate the Commission; second, Strauss was withholding information from his colleagues. Cole himself attempted to refute the first charge by assuring the committee that the phrase had originated, not in a suggestion from Strauss, but in Norris's research for the Joint Committee bill. The phrase, Cole contended, was common in organic statutes for regulatory commissions. Knowledgeable persons, however, including members of both the Joint Committee and Commission staff, believed that Strauss had proposed the idea. As the hearing proceeded, the committee could begin to appreciate why Strauss might have suggested the provision, if only informally. After considerable prodding by Senator Clinton P. Anderson, Commissioner Zuckert admitted that he believed he had been deprived of information relating to his responsibilities, specifically atomic energy matters discussed in the National Security Council. Zuckert was careful to deny any personal criticism of Strauss; the problem, he said, lay rather in the complexities of administrative structure.

In response, Strauss reminded the committee that the Commission had never had regular representation on the National Security Council. As special assistant to the President, Strauss had attended council meetings before he became chairman, and the President had continued to invite him to attend in that capacity even after his appointment to the Commission. Strauss did not think that under the circumstances he could reveal to his colleagues all the atomic energy matters discussed by the council. Senator Anderson agreed that Strauss could hardly do otherwise unless the President chose to give the Commission official representation on the council.

Zuckert, however, argued that the problem was not so easily resolved. The people of the United States had a right to expect that the Commissioners were fully competent to exercise their authority, but in fact they were not privy to all the information related to their responsibilities. The fault lay, not in the President, the National Security Council, or Strauss, but rather in the nature of the Commission's responsibilities and the structure of the Executive Branch. As Congressman Holifield put it, the Commission was no longer engaged simply in producing fissionable materials and weapons. Under the proposed bill, the agency would have wide influence on policy in both international affairs and domestic economic matters. Zuckert maintained that this new authority would inevitably involve the Commission in politics, and it was unrealistic to expect that the Commission could continue to maintain a nonpolitical or even a nonpartisan stance. The Commission in Zuckert's opinion would have to become part of the Administration. He even went so far as to suggest that the President be given authority in the law to appoint a majority of the Commissioners at the beginning of his term on a frankly partisan basis.

In response to a request from Senator Eugene D. Millikin, Zuckert offered an example of the kind of problem the Commission faced in the area of international affairs. The Commission, Zuckert said, had not been informed in advance about the contents of Eisenhower's Atoms-for-Peace speech. Strauss replied, not quite accurately, that the idea for the speech had crystallized in Bermuda and that the speech had been written on the flight to New York. The discussion then degenerated into a series of indirect exchanges between Murray and Strauss that clearly reflected the personal animosity between them.[24]

The significance of the "principal officer" debate, however, lay in Zuckert's observations that the Commission was heading (or was being led) into the political arena. The issues raised in the attempt to amend the legislation demonstrated that fact. So did the Commissioners' growing sense of responsibility in areas previously reserved for the President and his advisers. No less significant was Eisenhower's realization that atomic energy posed critical issues in both domestic and international policy. In fact, much Commissioner dissatisfaction with exclusion from such issues as the Atoms-for-Peace speech or Oppenheimer's access to classified information resulted from the President's determination to exercise his authority in matters clearly within the Commission's responsibilities.

THE HEARING: INDUSTRIAL DEVELOPMENT

On May 4, Strauss was finally able to return to his prepared statement. On the provisions of the Joint Committee bill designed to encourage industrial participation Strauss cited a number of technical difficulties, but he mostly objected to the sections on patents and the ownership of fissionable materials. Closely following the Administration's own reasoning, Strauss held it impracticable to require the Commission, as the Joint Committee bill did, to retain government ownership of all fissionable material, whether produced by the government or by licensees in private facilities. Because the Joint Committee version would also require the government to pay the licensee just compensation for the material, the government would in effect be undertaking a long-term and open-ended commitment to purchase all commercially produced plutonium, whatever the price. If the committee insisted on government ownership, Strauss suggested that the Commission at least be given authority to decline to license reactors that would produce materials beyond the government's needs. Strauss also thought it wise to limit to its own maximum cost of production the price the government would have to pay.

Allardice, who knew Strauss well, did not hesitate to probe the reasoning behind the Commission's opposition to government ownership. After

weeks of drafting, the committee had concluded that government ownership would be necessary to maintain adequate controls over fissionable materials, particularly plutonium, which could be used for weapons. The Commission had opted for private ownership mainly to avoid an open-ended government commitment to purchase plutonium produced in privately owned facilities, especially if military needs for plutonium should be satisfied at some time in the future. This concern had taken on new dimensions in July 1953, when Strauss had reopened the question of encouraging industry to build dual-purpose reactors, which would produce significant amounts of plutonium. Allardice doubted that dual-purpose reactors would have any important role or that military demands for plutonium would decline in the near future. He also claimed that private ownership would both require industry to invest large sums in fuel inventories and discourage private participation. As a practical matter, both Allardice and Holifield
126 feared that the prospect of placing weapon quantities of fissionable material in private hands was enough to defeat the bill in either house.[25]

The patent question was always complicated, but the point at issue in the May hearings was clear-cut. The committee bill, largely reflecting the strong ideological views of Cole and Norris, abolished the special patent provisions of the 1946 act and failed to provide for a transition period of compulsory licensing of patents developed under government contract. Cole took the position that any infringement, even a five-year period of compulsory licensing of patents, violated constitutional rights and threatened the very root of American technological superiority. Strauss and the Eisenhower Administration were no less interested in preserving the patent system, but they were also concerned about preventing a monopoly of the new industry by a few large companies that already had an advantage as Commission contractors. Without support from either the Commission or the Republican administration, Cole faced a tough battle on the patent question, given the strong Democratic minority that advocated an even longer period of compulsory licensing.[26]

Predictably private ownership of reactors and fissionable materials received almost unanimous support at the public hearings beginning on May 10, 1954. Jerome D. Luntz, editor of *Nucleonics* magazine, cited an informal survey of business leaders to show that private ownership of reactors was the most popular feature of the Joint Committee bill. He admitted that an industry probably could be started with leased fuels, but he saw no disadvantages in private ownership of fissionable materials. Representatives of the American Bar Association, equipment manufacturers, electric utility companies, and the Federation of American Scientists all took the position that private ownership was essential if atomic energy was to join the private enterprise system.

Opinions were nearly as unanimous in opposing Section 102 of the

bill, which required, as the 1946 act had, a report on the social, political, economic, and international aspects of any practical commercial use of atomic energy before the Commission could issue any licenses for this purpose. The opposition, mostly from equipment manufacturers and electric utilities, followed closely the reasoning expressed in private by the Commissioners six months earlier: the writing and clearance of such a report through the federal bureaucracy would be so difficult and time-consuming that it would greatly delay the entrance of nuclear power into the civilian economy. Throughout most of the hearings, Congressman Holifield stood alone in his insistence that the Commission had an obligation to inform the Congress of the potential impact of a new technology. Only in the closing hours of the hearings on May 19 did Leland Olds, a former chairman of the Federal Power Commission and now a public-power lobbyist, suggest that such a report would be vital if electric power from the atom was to be integrated "into the total power policy of the country."[27]

The question of compulsory licensing received the most prolonged discussion in the public hearings. Although the issue was directly associated with patent policy, the debate centered largely on the dangers of monopoly. Only the spokesmen for the patent law association examined the legal and constitutional questions of infringements on patent rights. Industry representatives saw little possibility of a patent monopoly in atomic energy, and representatives of small businesses saw no advantage at all in a compulsory system of cross-licensing. On the other side, spokesmen for organized labor, the public-power movement, and rural electric companies saw the absence of compulsory licensing provisions as extending the tight monopoly that private utility companies had allegedly established in the electric power industry. Holifield stressed the monopoly theme in questioning witnesses and pointed out two instances in which antimonopoly language in the 1946 act had been deleted. Even though the discussions of compulsory licensing were scattered through the hearings, Holifield succeeded in maintaining continuity in his attack on the industrial participation provisions of the bill.[28]

DIXON-YATES: A POLITICAL DIVERSION

In a closed session with the Joint Committee on May 5, 1954, Casper Ooms, the patent authority, had reflected that both the committee and the Commission were probably placing too much stress on the patent issue. It was prudent to include provisions in the bill to meet all likely circumstances, but Ooms did not see the patent sections as determining the future of the nuclear industry.[29] The frequent discussions of patents, and particularly the merits of compulsory licensing, during the hearings were merely

outward symptoms of a deeper concern: Would the federal government or private industry develop and then control this promising new source of energy?

Through most executive sessions and open hearings on the atomic energy bill, the Joint Committee had been able to steer away from this larger and highly volatile question. But already at work within the Administration were forces that would tie the bill to the public-versus-private power issue. On June 4, when the committee concluded its long discussion of the principal officer issue, Holifield raised a question about the proposed Section 164, which would extend the authority granted the Commission in the 1946 act to enter into contracts to provide electric utility services "in connection with the construction or operation of the Oak Ridge, Paducah, or Portsmouth installations." Holifield noted the difficulties that a group of private utility companies had encountered in completing a power plant at

Joppa, Illinois, across the Ohio River from the Commission's Paducah gaseous-diffusion plant. The press and TVA supporters had come to refer to the sorry stories of construction delays and cost overruns at Joppa as the "Ebasco fiasco," a term that Holifield used in his remarks. He went on, however, to describe his concern over a proposed new contract between the Commission and "the Dixon-Yates group" to supply 600,000 kilowatts of power in the Memphis, Tennessee, area. Holifield noted that the Commission did not propose to use the power from the Dixon-Yates plant for its own facilities but rather to meet TVA requirements in the Memphis area. He announced his intention to involve the committee's right to analyze Section 164 as the basis for a full-scale discussion of the Dixon-Yates proposal.[30]

The bizarre proposal, which became infamous as "the Dixon-Yates contract," had its origins in the primary tenets of the Administration and, in fact, in Eisenhower's personal philosophy of government. In his remarks at the dedication of Garrison Dam in North Dakota on June 11, 1953, the President had spoken of the need to disperse the powers of the Executive Branch both functionally and geographically. By accepting the federal government's role in building giant dams, Eisenhower warned that it was "part of a great conservation work that all parts of our nation must benefit from and must participate in." The following week in a news conference, the President made clear that he was thinking of TVA when he had spoken of the dangers of "creeping socialism." He thought it was necessary to re-evaluate a situation in which general tax revenues could be used to provide cheap power to one section of the nation.[31] TVA, as a regional power system financed with federal funds, seemed to do just that. As the President saw it, there were only two alternatives. Either the federal government could establish more TVAs across the country until the nation's entire electric utility system was government-owned, or TVA would have to live on its own

resources without help from federal taxes; unquestionably, the President preferred the second alternative.

A perfect opportunity to launch the President's attack on "creeping socialism" came in autumn 1953, when TVA requested 1955 budget funds to begin work on a coal-fired power plant on the Mississippi River at Fulton, Tennessee, to supply the rapidly growing power needs of the Memphis area. The President and Budget Director Dodge opposed this request, not only as an unwise extension of TVA but also as a threat to the Administration's campaign for budget cuts. When the Bureau of the Budget asked TVA Chairman Gordon R. Clapp what the agency would do if the Administration refused the request, Clapp replied that the TVA board would probably recommend that some power then being provided for the Commission's gaseous-diffusion plants be released to meet TVA's growing needs.[32]

Clapp's reply was probably little more than a ploy to convince the Bureau of the Budget that building the Fulton plant was the only possible solution, but Dodge took the idea seriously. On December 2, 1953, he met with Strauss to discuss the possibility that the Commission could obtain additional power from private sources to operate the final sections of the Paducah plant still under construction. Strauss immediately asked a senior member of the Commission's staff to approach James W. McAfee, president of Electric Energy, Incorporated, which was already supplying private power at Paducah from the Joppa plant. Although McAfee did not think his own company could accept a contract, he suggested that the Commission consult Edgar H. Dixon, president of Middle South Utilities, which was interested in supplying the Memphis area. On Christmas Eve, Rowland R. Hughes, assistant director of the Bureau of the Budget, informed Strauss that the TVA budget would include no funds for the Fulton plant on the expectation that the Commission would find a private source to relieve TVA of 500,000 to 600,000 kilowatts of the Commission's power requirements. Hughes decided to include a statement to this effect in the President's budget message to Congress, with the proviso that the bureau would consider supplemental appropriation for the Fulton plant if the Commission's efforts failed.[33]

The President's reference to the possibility of a supplemental appropriation probably represented an attempt to disarm those who would claim that the Administration's plan was designed to kill TVA; but the reference also seemed to recognize the difficulties in carrying out the plan. Until January 6, no one at the Commission except Strauss and one staff member knew of the plan. Both Murray and Zuckert were outraged when they learned that Strauss had been involved in discussions for more than a month without their knowledge, and Nichols was less than enthusiastic about the proposal on the realistic grounds that it would cost the Commission more money for power under a contract less firm than that with TVA.

Furthermore, both McAfee and Dixon argued for a direct contract between TVA and a private utility to provide power at Memphis, where it was needed, rather than at Joppa, where it would be hard to dispose of excess power if the Commission contract were canceled. Clapp, however, refused to consider any plan that would require TVA to purchase power from a private utility. The only solution seemed that proposed in Hughes's office on January 20, 1954: namely, the Commission would negotiate a contract with a private utility to build and operate a power plant across the Mississippi River from Memphis, and the Commission would release an equivalent amount of power being supplied by TVA's Shawnee plant near Paducah. At Hughes's request, Nichols discussed the idea with both Dixon and Eugene A. Yates of the Southern Company. On February 20, Dixon and Yates agreed to submit a proposal that would accomplish the complex arrangement the Administration had devised.[34]

THE COMMISSION AND DIXON-YATES

As in the origins of the Oppenheimer case and the Atoms-for-Peace speech, the Commission was in fact something less than an enthusiastic participant in devising the Dixon-Yates plan. Among the Commissioners probably only Strauss saw TVA as a threat to private enterprise,[35] and even he was not happy about the prospect of the Commission being used as an agent to accomplish a policy aim that had nothing to do with atomic energy. Strauss certainly would look with disfavor on any plan that would threaten the power supply to the Commission's production plants or raise costs substantially. Only Nichols saw real merits in the proposal, in an entirely technical sense. As an engineer, he thought it reasonable to build the plant near Memphis where the power was needed. Murray, as an engineer from the electric utility field, might conceivably have come to a position close to Nichols's and thus on Strauss's side of the question, but Strauss had once again aroused the suspicions of his colleagues by failing to apprise them of his discussions with the Bureau of the Budget. Perhaps Strauss in this instance and others had avoided his colleagues because he had his own reservations about the Administration's proposal and did not wish to be placed in a situation of defending his superiors. This explanation seemed likely in the Dixon-Yates case. Because it did not yet involve the President personally, Strauss could not hope to justify his independent action on the basis of his confidential role as a presidential adviser.

When the two utility executives received Hughes's invitation to submit a proposal, they were given only a few days to complete it. They proposed to form a corporation that would finance and construct a new power plant in the Memphis area under a twenty-five-year contract with the Commission (the limit of the Commission's authority under the Atomic Energy

Act). The annual capacity charge would be based on an estimated plant cost of $200 per kilowatt. The Commission would be required to pay the annual capacity and energy charges, to compensate the corporation for all taxes, and to arrange for interconnecting with the TVA system.

The Commission's reaction to the proposal was ambivalent at best. Although the proposal would save the federal government at least $120 million in capital costs, the Commission would have to pay about $4 million per year more than the existing TVA contract required, and less than $1 million of that amount would be returned to the government in federal taxes. Furthermore, because the power would come from a plant not yet built, it would be less reliable than the TVA power already available and under contract. Because these features of the proposal were distinctly disadvantageous to the Commission, any determination to accept the proposal would have to be made by "higher executive authority or the Congress" on the basis of overall advantages to the nation. The Commission's letter to the Bureau of the Budget on March 3 did not make clear that both Smyth and Zuckert were opposed to even conditionally accepting the proposal.[36]

But if Clapp or any Commissioners hoped that the relatively unfavorable provisions of the Dixon-Yates proposal would result in its rejection, they were to be disappointed. Hughes requested Nichols at once to work with the Federal Power Commission in negotiating a more favorable arrangement. The revised proposal submitted by Dixon and Yates on April 10 did scale down the proposed charges substantially, in part by reducing the estimated cost of construction from $200 to $149 per kilowatt. Nichols also succeeded in incorporating provisions that would require the corporation to accept half of any escalation in construction costs up to about $10 million more than the estimated $107 million and all added costs above $117 million. Under this proposal, the added annual cost would be less than $2 million above that of the existing TVA contract, all of which could be attributed to taxes.[37]

In commenting on the new proposal, the Commissioners reiterated to Hughes their concerns about assuring the reliability and continuity of power at Paducah. They argued that TVA should bear all costs for power above those in the existing TVA contract to avoid a Commission subsidy of TVA. Once again, Strauss requested that either the Budget Bureau or Congress determine whether the proposal was appropriate. Commission discussion of the contract, however, brought out new objections. Smyth and Zuckert pointed out in a letter to Hughes, now director of the bureau, that "not one kilowatt" from the Dixon-Yates plant would be used in Commission production facilities. The Commission would be assuming a twenty-five-year commitment to support a project "irrelevant" to its own mission. Smyth and Zuckert called the proposal "obviously incongruous" and "a reversal of the sound philosophy" incorporated in draft legislation recently sent to the Congress to remove from the Commission responsibilities not

essential to its mission. The two Commissioners made clear, however, that "if the President or the Congress directs the Commission to accept such a responsibility, we will endeavor to discharge it fully."[38]

DIXON-YATES: THE ISSUE DRAWN

As long as the discussion of the Dixon-Yates proposal remained within the Executive Branch of the government, the Administration could control the situation. But once the matter came to the attention of the Congress, Dixon-Yates would become a political issue. Although the Joint Committee learned of the Dixon-Yates idea early in January, probably from Commissioner Murray, there was no real basis for raising the issue until something specific appeared in written form. The inevitable occurred during the Con-
132 gressional review of the 1955 budget. By the time the Commission submitted the revised Dixon-Yates proposal to the Bureau of the Budget in mid-April, the House Appropriations Committee had already approved both the Commission's and TVA's budgets, and the Senate subcommittee was waiting only for a decision on the Fulton plant to complete its action on the TVA budget. Although Nichols did everything he could to avoid a commitment until the Administration had had time to analyze the new proposal, he was forced to submit a short statement on the proposal to the Senate subcommittee on April 17. That provided Senator Albert Gore of Tennessee just enough ammunition to raise some questions about Dixon-Yates in the Senate on April 21. Gore asked why, in light of the poor performance of private industry in building the Joppa plant, the government had decided on a complicated arrangement to produce replacement power two hundred miles from the Paducah plant at a cost exceeding that of the existing TVA contract. The senator could see only three reasons: "to strike a death blow forever" at the Fulton plant, to move private utilities into the TVA area at Memphis, and to subsidize a private-power company through the Atomic Energy Commission. Gore alerted the Administration to the far-reaching implications of the proposal, warning "that it will be a story many times told if the proposal is accepted."[39] The Administration could have no clearer signal that Dixon-Yates would embroil the Commission in a full-fledged fight on the issue of private versus public power.

Congressman Holifield had fired the opening salvo at the Dixon-Yates proposal in the Joint Committee hearings on June 4. Having gained Cole's assent to probe the question in detail as a part of the committee's review of Section 164 of the proposed bill, Holifield launched a full-scale attack on Dixon-Yates on June 17. By that time two events had sharpened the issues. First, as Nichols revealed in the hearing, on June 16 the President had directed the Commission to start negotiations with Dixon and Yates. Second, there was almost no support for the proposal within the

Commission. The Smyth-Zuckert letter to Hughes had leaked to the press on June 4. In the afternoon session on June 17, Murray made clear his opposition to the proposal on the grounds that it was not a logical function for the Commission. Murray's testimony was of special significance because, as he noted, he had long supported private-power development and had been responsible in part for private building of the Joppa plant. Murray's statement also meant, as Senator Gore was quick to point out, that a majority of the Commissioners opposed the idea. Campbell, who squirmed under Holifield's persistent questioning, would say only that he agreed with Nichols's analysis of the proposal. That was not much of an endorsement because Nichols, as general manager, claimed only that the proposal was a technically sound approach to accomplishing the Administration's objectives, which were beyond his responsibility. Campbell's ambiguous stance left Strauss the proposal's sole supporter. Strauss based his support on the argument that government competition in "the power business" was unfair to private industry because of tax and investment advantages enjoyed by TVA. The savings claimed by TVA were illusory in Strauss's opinion because they were ultimately paid for by general tax revenues.[40] Thus, Strauss found himself virtually alone on the Dixon-Yates proposal, in a position resting almost entirely on a political argument.

A NEW BILL FROM THE JOINT COMMITTEE

Once Holifield introduced the Dixon-Yates issue on June 4, 1954, the attention of not only the Joint Committee but also the full Congress gravitated quickly to the controversial issues that the proposal raised. Only with difficulty did Chairman Cole keep the discussion on the provisions of the Joint Committee bill for two more days. The final all-day sessions on June 17 and 18 were devoted exclusively to Dixon-Yates. Although the intrusion of Dixon-Yates posed obvious problems for further action on the bill, the hearings had proved useful. Relations between the Joint Committee members and the Commissioners had been good; the discussions had for the most part resulted in a free and open exchange of ideas without too much concern about prerogatives and established positions. Cole's patience as the presiding officer softened the impact of Holifield's sometimes strident and partisan inquiries.[41]

To the casual observer, the new bill that Cole and Hickenlooper introduced in the House and Senate on June 30, 1954, appeared almost identical to the earlier Joint Committee drafts. But close examination revealed significant changes in some sections. In the international area, the Commission could take some comfort in the softening of the provisions of Section 123, which had required Commission approval of the security procedures of foreign nations and which had given the United States a unilat-

eral right to withdraw from bilateral agreements on peaceful uses of atomic energy. More ambiguous was the wisdom of other changes adopted at the suggestion of Senator Bricker. The words "or group of nations" had been deleted from every section relating to international cooperation so that such activities would be limited to single nations with which bilateral agreements had been negotiated under the conditions specified in Section 123.[42]

Also at Bricker's suggestion, the committee had added a new provision, Section 124, which authorized the President to negotiate an international arrangement establishing an atomic pool with a group of nations. The new section appeared to implement the President's suggestion in his Atoms-for-Peace speech, but any such arrangement would have to comply with the provisions of Section 123. In other words, membership in the international pool would be limited to nations with which bilateral agreements had been negotiated. Furthermore, any "international arrangement" for an atomic pool would have to take the form of a treaty, which would have to be approved by the Senate, or a joint resolution, which would have to be submitted to both Houses of Congress. As Holifield and other Democrats would point out, Section 124 would surely exclude the Soviet Union from the atomic pool and would make any pool under United Nations auspices impossible. In the eyes of Bricker and probably Strauss, Section 124 would retain rigid safeguards over distribution of fissionable materials and would keep any atomic pool firmly within Congressional control.[43]

On matters of security, the June 30 bill provided a clear-cut definition of restricted data that reverted to the position originally taken by the Commission in autumn 1953. The Joint Committee's definition would retain as restricted data all information related to the "design, manufacture, or utilization of atomic weapons" and eliminate the complicated provisions insisted upon by the Department of Defense for joint determinations by the two agencies in removing weapon information from the restricted data category. The new draft also abandoned the earlier provision for automatically declassifying restricted data.

Retaining the Commission's proposal to permit private ownership of production and utilization facilities, the committee draft excluded the private ownership of fissionable materials originally endorsed by the Commission. Apparently Allardice's contention that government ownership was necessary to assure effective control of the material was persuasive. Having opted for government ownership, the committee had to meet the Commission's valid objection that the bill in its original form would have required the government to provide "just compensation" for all fissionable materials produced in privately owned reactors. The committee addressed this problem by changing Section 52 to read that the government would pay "a fair price" for all such material; Section 56 set forth a number of considerations that the Commission could use in determining fair price in order to avoid

open-ended commitments to purchase all material at whatever price might constitute "just compensation."

Section 53 of the revised bill was greatly expanded to cover another question raised by continuing government ownership: the distribution of fissionable materials for research and development, medical research, and therapy, and its licensing for industrial uses. The new section prescribed the uses for which material could be distributed, the criteria to be met before licenses could be issued, the basis for reasonable charges for using fissionable materials, and the conditions to be included in licenses. To reflect recent accomplishments in developing thermonuclear weapons, the committee substituted the words "special nuclear materials" for the more limited phrase "fissionable materials" wherever it appeared in the bill. The revised language of Section 51 would permit the Commission to declare other materials such as tritium or deuterium to be special nuclear materials if it so desired.

On two controversial points in the April draft the June 30 bill provided reasonable compromises. First, the Section 21 provision establishing the chairman as "the principal officer" of the Commission had been modified along the lines that Murray had suggested; now the chairman would be the "official spokesman" of the Commission, but the section also provided that each member of the Commission would "have equal responsibility and authority" in all actions of the Commission. The second point of contention involved Section 102, which required the Commission to file a report on the practical value of atomic energy for peaceful purposes before any license could be issued. As a compromise, the June 30 bill provided that the Commission would have to make a written finding that at least one facility had been sufficiently developed to be of practical value for industrial or commercial purposes before a license would be issued for that type of facility. But the Commission was no longer required to file a report that would predict "the social, political, economic, and international effects of such use." The mere finding of practical value would be much easier to make.

One of the most striking changes in the June 30 bill was the complete reversal of the patent position that Cole and Norris had set forth in the April draft. Although Cole continued to believe that compulsory licensing of patents was both unwise and unconstitutional, the majority of the committee was impressed by arguments for cross-licensing advanced by the Commissioners and their patent advisers. Once the Joint Committee had decided to introduce compulsory licensing, it was necessary to draft all the legal paraphernalia to cover patenting and licensing of inventions or discoveries in the nonmilitary field. For this purpose the committee staff made its only adoption of language from the Commission's own peaceful uses bill; the exact words of the Commission draft appear nowhere else except in

Sections 152(a) and 152(b) of the June 30 bill.[44] To this basic structure the committee added other provisions drafted by Ooms and the Commission's legal staff.[45] These sections covered the qualifications of license applicants, the Commission's procedures in granting licenses, the payment for royalty fees, and various patent technicalities. Compulsory licensing was to be in effect for a period of five years. Section 156 also reinstated the patent compensation board, which had earlier been rendered unnecessary by eliminating compulsory licensing.

The June 30 bill, running to more than one hundred pages, was long and complex. Not all members of the Joint Committee understood the implications of all its provisions, nor could they find their way through the labyrinth of nineteen chapters and dozens of cross-referenced sections. But the bill as it was presented to the Congress for debate did reflect to some extent the views of American industry and labor unions, public interest
136 groups, scientists and engineers, the Administration and the Executive Branch, and finally the committee itself. The bill had resulted from more than a year of deliberations in the Commission, the Executive Branch, and the Joint Committee. In most respects it seemed to accomplish the original purpose of making nuclear technology a part of American life. The Dixon-Yates controversy, however, raised some doubt as to whether the very process of developing new legislation had brought into play forces that would destroy all chances for the bill's adoption. In any case, the fate of the bill and the future of the nation's atomic energy program now rested with the House of Representatives and the Senate.

THE CONGRESSIONAL DEBATE

It was already apparent on June 30 that Cole and Hickenlooper would face a tough fight in guiding the bill through Congress. Although the two leaders could count on strong support from the Eisenhower Administration, the Republican majorities in both houses were razor-thin, four votes in the House and only one in the Senate. In addition to the four-vote margin, Cole did have the advantage of the rigid rules for House debate, which tended to give the majority the advantage. The Joint Committee chairman also had a good working knowledge of the bill and sufficient prestige and ability to lead the bill's supporters in the House.

Hickenlooper faced a much more difficult task in the Senate. On a purely partisan basis, his chances were no better than fifty-fifty after Wayne Morse, the Oregon independent, announced on June 18 that he saw the bill as an Administration attempt to give the nation's atomic energy program to American monopolies. Nor could Hickenlooper count on many conservative southern Democrats to support the Republican cause in this case. The Ad-

ministration's decision to pursue the Dixon-Yates contract had been interpreted in TVA country as an attempt to destroy the public-power enterprise. Tennessee's two Democratic senators, Albert A. Gore and Estes Kefauver, had already joined forces with Lister Hill and John J. Sparkman of Alabama and with Warren G. Magnuson of Washington in a stated objective of using the impending Senate debate on the atomic energy bill as a way of defeating the Administration on Dixon-Yates.

The Joint Committee's decision to accept Senator Bricker's amendments to the international sections also threatened the future of the bill. Not only did the Bricker amendments raise the charge that the "atomic pool" provision in Section 124 was a "phony" but they also would inevitably introduce into the debate the touchy subject of the United Nations. As the State Department had warned, Section 124 could easily tie the bill to strong sentiments in the Congress against the United Nations and international cooperation in general. In fact, liberal Democrats like Holifield and Senator John O. Pastore of Rhode Island saw Section 124 as a new form of the recently rejected Bricker amendment to the Constitution, which would have restricted the President's authority in international affairs.[46]

Although Hickenlooper served as principal spokesman for the bill in the Senate, the fate of the measure rested mostly with William F. Knowland of California. As majority leader, Knowland determined the schedule of debate in the closing weeks of the Eighty-third Congress, which planned to adjourn on July 31. Working closely with the Administration, Knowland wanted to delay action on the bill long enough so that he could use the pressure for adjournment to limit debate while still leaving enough time to complete action on the bill. Thus, Knowland did not strongly resist the efforts of the TVA senators to prolong debate during the first two weeks of July 1954, as they launched full-scale attacks on the Dixon-Yates proposal. When Hickenlooper formally began debate on the Joint Committee bill on July 13, Knowland still appeared willing to let the Dixon-Yates opponents have relatively free rein.[47] Although Hill, Kefauver, Gore, Morse, and Magnuson were energetic and determined, they could not expect to stop Senate action on the bill by themselves; Knowland anticipated that within a few days the TVA group would run out of steam.

Knowland's hopes for passing the atomic energy bill, however, took a decided downward turn on July 15, when "a liberal coalition," as the press called it, began to form in opposition to the bill. On that Thursday afternoon, a number of representatives of consumer, farm, and labor organizations met by chance in the corridors of the Senate office building and discovered that they had a common interest in defeating the Dixon-Yates proposal. This group quickly coalesced around the TVA senators led by Lister Hill, and within a few days a hard core of opposition to Dixon-Yates had been organized to include about twenty senators. The small group of

TVA senators had now been enlarged to include those who saw Dixon-Yates as a threat to public-power interests and to the old progressive fight against monopoly.[48]

The strength of the new coalition became evident on Friday, July 16, when Knowland was unable to keep the debate on the atomic energy bill from drifting off into prolonged attacks on Dixon-Yates. The proposal itself had become a legitimate issue in the debate when Senator Clinton P. Anderson, speaking for the Democratic minority of the Joint Committee, introduced an amendment that would have limited the Commission's contracting authority under Section 164 to the purchase of power to be used directly in Commission facilities. Homer Ferguson of Michigan countered with an Administration amendment that would specifically authorize arrangements like the Dixon-Yates proposal.[49]

By Saturday, July 17, the new coalition of Democrats began to take
138 hold as senators from beyond the TVA area dominated the attack on Dixon-Yates. Responding to Democratic suggestions that the domestic development sections of the bill be dropped in favor of legislation enacting the Atoms-for-Peace plan, both Knowland and the President reiterated their determination to hold out for the entire bill, even if the Senate had to resort to twelve-hour sessions. On Tuesday, July 20, the Democratic threat took specific form when Herbert H. Lehman of New York introduced the Commission's original peaceful uses draft as a substitute for the Joint Committee bill. The February draft, which had not previously been printed in Congressional documents, contained none of the provisions for industrial participation in the Commission's original companion bill or in the measure before the Senate. Under Knowland's threat of round-the-clock sessions, the Democratic coalition controlled the floor all day Wednesday while they mustered support for a decisive vote that evening on the Dixon-Yates amendments.[50]

Adoption of the Ferguson amendment by a vote of fifty-six to thirty-five and defeat of the Lehman substitute showed that the Administration could drive the Joint Committee bill through the Senate without sacrificing the Dixon-Yates proposal. The vote also convinced the public-power coalition that its best weapon would be the filibuster, which would endanger not only the atomic energy bill but also the Administration's farm and foreign aid programs. As William H. Langer of North Dakota took the floor for a long disquisition on the dangers of monopoly, senators retired to cots set up in the cloak rooms.[51]

With the help of Wayne L. Morse, the record-holder for filibuster speeches, the coalition had more than enough resources to control the floor around the clock for the rest of the week. It also became clear on Thursday that the Democrats had enough votes to amend the bill on issues other than Dixon-Yates. Within a matter of hours late in the afternoon, the Senate adopted an amendment presented by Edwin C. Johnson of Colorado grant-

ing the Commission authority to produce and market electric power generated in its own plants and another by Guy M. Gillette of Iowa providing that public utilities and cooperatives be given preference in purchasing this power. Failing repeatedly to limit debate by unanimous consent agreement or to prevent minor amendments, Knowland early on Friday morning resorted to the tactic of tabling any amendment on which debate was not limited. Successful in this effort, Knowland also introduced a petition of cloture, to be voted on early in the following week.[52]

In an attempt to bring greater pressure on the Democratic opposition, the Administration decided to push the bill through the House on Friday, July 23, 1954. In contrast to the Senate debate, Cole and the Republican leaders in the House were able virtually to exclude extraneous matters such as Dixon-Yates. Members of the Joint Committee from both parties dominated the four hours of general debate and for the most part reiterated the arguments presented during the Joint Committee hearings. The debate on amendments under the five-minute rule telescoped into a few hours the days of argument in the Senate. Reflecting the Republicans' firmer control of the House, Cole and his associates were able to defeat House equivalents of the Anderson and Johnson amendments. The House also rejected several amendments proposed by Holifield to assure the Commission a commanding position in developing nuclear power for commercial purposes. The Democrats were successful only in adopting a preference clause in Section 44 on the sale of by-product power from Commission facilities and two amendments regulating leases of public lands for uranium mining.

By this time the debate was moving into the evening hours, a circumstance relatively rare in the House. With encouragement from Knowland and Vice-President Nixon, who had come over to the House side of the Capitol to lend support, Cole kept the debate on target. He quickly pushed through several technical amendments and then introduced the only substantive change he would propose: to strike the compulsory licensing provisions from the bill. Holifield and other Democratic members of the Joint Committee were quick to point out that the committee had already rejected Cole's proposal, but the House sustained Cole decisively by a vote of 203 to 159. By three o'clock on Saturday morning, the clerk read the last section of the bill; it was evident that the bill would pass with only the five amendments already adopted. Only a parliamentary maneuver delayed the vote until the following week.[53]

Prospects for the bill in the Senate now rested on breaking the filibuster. Knowland's threat of cloture was more a psychological than a practical instrument. Much more significant was a request late Saturday evening by Lyndon B. Johnson, the minority leader, for a unanimous consent agreement providing that no further amendments could be introduced after noon on Wednesday, July 28. Morse quickly killed the proposal by objecting,

but Johnson's proposal suggested that the Democratic leadership in the Senate was growing impatient. Johnson, with strong influence over conservative Democrats, could threaten the public-power coalition. Gore and the TVA senators also faced pressure from southern Democrats willing to support some public-power amendments but unwilling to do so during the filibuster. Knowland and the Administration, sensing a shift of opinion on the Democratic side, stood firm for the bill.[54]

After the cloture petition was defeated on Monday morning, July 26, the coalition began to accept two- or three-hour limits on the debate on each amendment presented, and the Senate spent the rest of the day considering a dozen such proposals, eight of which were adopted. Only one, proposed by Senator Gore, related to the Dixon-Yates issue. The only other successful amendment of significance was proposed by Robert S. Kerr of Oklahoma to extend the period of compulsory licensing from five years to ten. Knowland's hopes for a vote on the bill, however, were dashed late on Monday, when Morse resumed the filibuster that he continued through the night. Not until Tuesday evening was Knowland able to bring the thirteen-day debate to an end after more than 180 hours of discussion, a Senate record for a two-week period. The first vote, fifty-seven to twenty-eight, was close to that on the Ferguson amendment, which specifically authorized the Commission to enter into the Dixon-Yates contract. Thirteen Democrats joined forty-four Republicans in voting for the bill. Opposing the bill were twenty-five Democrats, two Republicans (John Sherman Cooper of Kentucky and Langer of North Dakota), and Wayne Morse. Senator Anderson of New Mexico was the only member of the original Democratic opposition to vote for the bill.[55]

THE BILL BECOMES LAW

The conference committee appointed to resolve differences in the Senate and House versions of the bill were with one exception members of the Joint Committee: for the House, Republicans Cole, James E. Van Zandt of Pennsylvania, and Carl Hinshaw of California and Democrats Holifield and Carl T. Durham of North Carolina; for the Senate, Republicans Knowland, Hickenlooper, and Bricker of Ohio and Democrats Johnson of Colorado and Anderson. Cole and the Republicans clearly dominated the conference sessions during the first week in August. The conference report released on August 6 retained the Ferguson amendment, which specifically authorized the Dixon-Yates contract and watered down the provisions granting public utilities and cooperatives a preference in purchasing by-product electric power produced in Commission facilities. The preference clauses sponsored by the Democrats and already adopted in both houses were to be effective "at all times"; in the conference report, they were applicable "in-

sofar as possible." The conferees also eliminated the Johnson amendment, one of the public-power coalition's few victories in the Senate, which gave the Commission authority to produce and market electric power from its own facilities. Holifield and the public-power group envisioned that under the authority granted by the Johnson amendment the Commission would be able to build and operate full-scale nuclear power plants that would provide a "yardstick" for commercial plants, such as TVA facilities had done for private utilities using conventional fuels. It was precisely this kind of extension of the TVA idea that the Eisenhower Administration was fighting. The conferees also retained a provision sponsored by New England's two Democratic senators, John F. Kennedy of Massachusetts and John O. Pastore of Rhode Island, which would give private utilities in high-cost power areas, where public power was not available, a preference in purchasing by-product power from the Commission. All these changes stemmed directly from the public-versus-private-power fight and had only a marginal impact on the Commission.[56]

A second and equally psychological victory for the Republican members of the conference committee was the wholesale reincorporation of the Cole-Norris patent philosophy employing the identical language of the Joint Committee's April draft and the Cole amendment adopted in the House on July 26. The Cole-Norris approach deleted all the language in Section 152 and the following sections that provided for compulsory cross-licensing of patents on nonmilitary inventions determined by the Commission to be affected with the public interest. In place of the nonmilitary uses section, Cole substituted his original language, which would limit patent licensing to inventions made under Commission contracts. As a sop to the Democrats, Cole and the Republican conferees did accept the restoration of two provisions in Section 155 on eligibility and standards for patent licensing (now to be possible only in Commission-related activities) and a new Section 156, which specifically prohibited the monopolistic use of patents granted with the Commission's permission on nonmilitary inventions. The language was archaic, but both sides understood the issue—whether the government or private industry was to control the development of atomic energy for civilian purposes.

Representative Holifield and Senators Anderson and Johnson refused to sign the conference report, and the Democrats assailed it in both Houses. First to fall was the "insofar as practicable" restriction in the preference clauses. Cole disclaimed any "sinister" motive in the conference committee's action. The qualification, he maintained, merely recognized that preference could not be granted in every situation. The Democrats, asking who was to determine what was "practicable," attacked the qualification as a Republican attempt to wipe out the hard-fought and meager victory of the public-power coalition. Knowland, plainly hoping to avoid the delay that would be caused by a second conference, suggested a joint

resolution deleting the objectionable phrase. The Democrats, however, obviously would not accept Cole's deletion of the compulsory licensing provisions, and the Senate voted on August 13 to reject the conference report.[57]

The second conference, during the second week of August, centered on the compulsory licensing question. Cole, who remained adamant in his opposition to compulsory licensing, finally saw that he was fighting for a lost cause. The public-power senators were determined to revive the filibuster over this issue, and the Administration was not willing to lose the entire bill over a point that seemed more symbolic than real. Because Norris remained as determined as Cole in his opposition, Allardice asked Francis P. Cotter of the Joint Committee staff to work out a compromise: Cole's version of Section 152 governing patents in Commission-related activities would stay in the act but so would the language providing for compulsory licensing for a period of five years. The compromise removed the last roadblock. Following House acceptance of the second conference report on August 17, President Eisenhower signed the act into law on August 30.[58]

In the narrow sense of partisan politics the outcome was a victory for the Republican Congress and for the President. Eisenhower had inspired the legislation. The Republican leadership of the Joint Committee had written a strong bill that would break the government monopoly of the atom and make possible some cooperation with other nations for both military and civilian purposes. With the bill well in hand, Eisenhower and his advisers had not hesitated to launch the Dixon-Yates proposal, which was intended to circumscribe the growth of federal power systems. Republican leadership in the Congress had, with the President's unflagging support, embodied the Dixon-Yates proposal in the law, fought off the filibuster, and then carried through every key provision of the legislation.

For the Commission as a government agency, the legislation accomplished virtually all the aims set forth by the staff in autumn 1953. In addition to the much-discussed provisions for industrial participation and international cooperation, the 1954 act effected many other revisions of the original law. Most of these never attracted attention in Congressional hearings or debates, but they were vital to the efficient administration of the agency's business. In the eyes of some veterans on the staff, the Commission had paid a high price for the new law. Along with the new authority for industrial and international cooperation came inevitably more restraints by both the Executive and Legislative branches. The President, and not the Commission, would have the final voice in approving international agreements, and the Joint Committee would have an opportunity to criticize, if not invalidate, international agreements before they became effective. The Commission also lost to the Joint Committee a measure of independence that only experienced administrators could appreciate. Never discussed in Congressional hearings or debates but strongly opposed by the Commission

was a provision in Section 261, which would require Joint Committee authorization of all appropriations for plant and equipment. To this degree, the Joint Committee acquired the power of the purse in addition to its already impressive influence on policy matters, and the Commission to the same degree lost a portion of its independence. The Commission, like nuclear technology, was beginning to move from its private world into the mainstream of American life.

Years later, former Commissioners would recall the passage of the 1954 Atomic Energy Act as the "high-water mark" of the Commission. Perhaps there were other events of equal or greater significance, but there is no question of the historical importance of this legislation. Old-timers would see it as the turning point in the history of the Commission—a unique moment full of hope and promise for the future.